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ISBN 0-315-55415-0

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THE UNIVERSITY OF ALBERTA

STRESS PERCEIVED BY CRITICAL CARE AND MEDICAL-SURGICAL NURSES

by

(C)

BETTY WINTONYK

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1989

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR: BETTY WINTONYK

TITLE OF THESIS: STRESS PERCEIVED BY CRITICAL CARE AND MEDICAL-SURGICAL NURSES

DEGREE: MASTER OF EDUCATION

YEAR THIS DEGREE GRANTED: 1989

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled STRESS PERCEIVED BY CRITICAL CARE AND MEDICAL-SURGICAL NURSES submitted by BETTY WINTONYK in partial fulfilment of the requirements for the degree of MASTER OF EDUCATION.

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This thesis is affectionately dedicated to my family for their patience, understanding and constant encouragement.

ABSTRACT

The purpose of this study was to identify the sources of work-related stress for critical care and medical-surgical nurses, to compare the levels of stress reported by both groups of nurses and to explore the relationship between perceptions of stress and selected personal, professional, and organizational variables including job satisfaction.

Questionnaires were distributed to 209 nurses from one tertiary care hospital in Alberta. One hundred and seventy questionnaires were returned for a response rate of 81.3 percent.

The questionnaire developed by the researcher consisted of three parts to obtain: 1. biographical data, 2. perceptions about work-related stress, and 3. general perceptions of work-related stress and job satisfaction. The questionnaire was pilot-tested by 15 nurses from a hospital other than the one selected for the study.

The major findings of the study included the following:

1. The majority of nurses perceived work to be moderately stressful.
2. The most stressful situations cited by the nurses were not the most frequently occurring situations.
3. Factor analysis of the 65 items revealed five stress factors: unsatisfactory relationships at work, lack of support for professional growth, patient care responsibilities, role strain, and management of the unit. Of the five factors, unsatisfactory relationships at work and management of the unit ranked highest in terms of intensity of stress.
4. The best predictors of overall stress were patient care responsibilities, role strain and lack of support for professional growth.

5. Critical care and medical-surgical nurses differed in their perceptions of stress, as measured by the five stress factors. Differences were not observed in overall stress scores.
6. The variables of nursing unit specialty, years in present clinical specialty regardless of place of employment, total years of nursing experience and the effect of relocation of nursing unit during June/July 1986 were related to variances in perceptions of stress, as measured by the five stress factors.
7. Demographic characteristics that explained variance in overall stress included: age, marital status, presence of children, employment status, years of present clinical specialty experience within the agency studied, years in present clinical specialty regardless of place of employment and total years of nursing experience.
8. The majority of nurses were satisfied with their job.
9. Overall job satisfaction was influenced by one variable only, the presence of children. Nurses with children reported greater satisfaction with work than did nurses without children.
10. A weak negative correlation was found between overall stress and job satisfaction.

Implications for practice were discussed in terms of managing stress and recommendations for further research were made.

ACKNOWLEDGEMENTS

I wish to thank Dr. R. Gordon McIntosh, my thesis supervisor, for his guidance and support during the course of the thesis preparation. His patience and encouragement have been greatly appreciated.

To members of my thesis committee, thank you for your advice and support. Dr. Eugene W. Ratsoy for his enthusiasm for research. Dr. Olive Yonge for her unrelenting encouragement.

Sincere thanks to Chris Prokop for helping me keep data analysis in perspective.

Sincere thanks also to Donna Nicol of Donnic Word Processing whose word processing expertise helped me see my work more clearly.

I am indebted to my family for their constant encouragement. Without the kind words from Vicki, my friend and Mom, this document would not have existed.

Special thanks to Barb Cavanagh for her humor, support and continued friendship.

Finally, thank you to the nurses who participated in the study.

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CHAPTER 1

OVERVIEW OF THE STUDY

Introduction

Selye's (1974:32) contention that "complete freedom from stress is death" clearly implies that stress cannot be avoided; stress is an integral part of daily life for everyone. Although a certain amount of stress is essential for well-being, prolonged or excessive stress may have debilitating psychological and/or physiological effects on the individual. Stress-related problems appear to be numerous, diverse, and widespread yet as Gherman (1981:xiv) eloquently pointed out, stress ". . . can be directed and controlled to provide the energy for health, growth, and the development of human potential."

The literature is replete with evidence that stress in the workplace is pervasive. As Mackay and Cox (1978:147) noted, "for most people at some time during their lives the work that they do acts as a source of stress." According to these authors, stress experienced at work is often short-lived and successfully managed but ". . . it can represent a continuous burden, and a serious hazard to comfort and health" (1978:147). The effect of work-related stress may manifest itself in the form of illness, high absenteeism, low productivity, high turnover rates, and job dissatisfaction.

Many nurses consider certain expectations and responsibilities of their work to be stimulating and challenging in nature but for others these expectations and responsibilities create overwhelming stress. It is commonly alleged that nurses who experience high levels of stress are "burnt out", dissatisfied with their work and disillusioned with nursing.

Nursing is generally considered to be a highly stressful profession (Albrecht, 1982; Appelbaum, 1981; Crickmore, 1987; Ivancevich & Matteson, 1980a; Marshall, 1980; Menzies, 1960; Milazzo, 1988). However, most research describing stress in nursing emphasizes stress experienced by critical care nurses. While it is possible that nurses of a particular specialty unit may experience stress unique to their unit, it is also possible that many work-related situations may be sources of stress common to all nurses employed within the hospital. Comparative studies are needed to provide empirical evidence as to how critical care and non-critical care nurses perceive stress and as such to provide a better understanding of the stressful nature of nursing.

Numerous factors identified as potential sources of work-related stress have also been identified as potential sources of job dissatisfaction (Fraser, 1983). Thus, it is not surprising to find that several researchers have reported a negative correlation between work-related stress and job satisfaction (Bryson et al., 1985; Burke, 1976; Margolis et al., 1974). Although a thorough investigation of work-related stress and job satisfaction was beyond the scope of this study, some indication of the supposed relationship may be obtained by exploring the overall levels of these two variables.

Purpose of the Study

The purpose of this study was to identify the sources of work-related stress for critical care and medical-surgical staff nurses within a tertiary care hospital in Alberta, to compare the levels of stress reported by both groups of nurses, and to explore the relationship between the nurses' perceptions of work-related stress and selected personal, professional, and organizational variables. The study also explored the relationship between the nurses' perceptions of overall work-related stress and job satisfaction.

Statement of the Problem

This study was designed to identify and compare work-related situations considered stressful by critical care and medical-surgical staff nurses and to examine the relationship of nurses' stress to selected personal, professional, and organizational variables and overall job satisfaction. The following questions, which guided the study, were modelled after stress research conducted by Jankovic (1983), Sands (1985), Williams (1981), and Wry (1985).

1. Overall Work-Related Stress

1.1 How do nurses rate their overall level of work-related stress?

1.2 To what extent are differences in nurses' perceptions of overall work-related stress associated with the personal variables of age, sex, marital status, and number of children?

1.3 To what extent are differences in nurses' perceptions of overall work-related stress associated with the professional variables of educational background, employment status, number of years in present specialty within the hospital currently employed, total years of experience in present specialty regardless of place of employment, and total number of years of nursing experience?

1.4 To what extent are differences in nurses' perceptions of overall work-related stress associated with the organizational variables of nursing unit specialty and shift assignment?

2. Sources of Work Stress

2.1 How do nurses rate the frequency of occurrence and the intensity of stress for each of the selected items?

2.2 What is the relationship between the frequency of occurrence and the intensity of stress with the selected items?

2.3 Which work situations do nurses personally identify in open-ended responses as being sources of work-related stress?

3. Stress Factors

3.1 Do the items perceived as contributing to the nurses' stress at work represent distinct stress factors?

3.2 To what extent are the stress factors associated with selected personal, professional, and organizational variables?

3.3 Which factors are the best predictors of overall work-related stress?

4. General Perceptions of Work-Related Stress and Job Satisfaction

4.1 How do nurses rate their overall level of job satisfaction?

4.2 To what extent are differences in nurses' perceptions of overall job satisfaction associated with the selected personal, professional, and organizational variables?

4.3 What is the relationship between nurses' general perceptions of overall work-related stress and job satisfaction?

Significance of the Study

For almost three decades, there has been continued interest in identifying the causes and effects of stress in nursing. As described in the literature, work-related stress detracts from the quality of working life for a large number of nurses. Stress in nursing is often viewed as being costly for both the nurse and the health care agency.

Unquestionably, most research on nursing stress focuses predominantly on stress experienced by nurses who work in critical care specialty areas such as intensive care units (Anderson & Basteyns, 1981; Huckabay & Jagla, 1979), coronary care units (Cassem & Hackett, 1972; Reres, 1972), and neonatal intensive care units (Gribbins & Marshall, 1982; Jacobson, 1983a). According to Bailey and Bargagliotti (1983:119), the trend of research on nursing stress ". . . has been the identification and rank-ordering of psychologic stressors of Critical Care Nurses." The literature suggests that nurses working in critical care specialty areas work in highly stressful environments and consequently experience high levels of stress. However, Stehle (1981:186) asserted that "widely generalizable data have not yet been published confirming the belief that critical care is more stressful than other types of nursing care." In their review of stress research in nursing, Gentry and Parkes (1982) agree there is no clear evidence that intensive care nurses are more stressed than non-intensive care nurses. As Kelly and Cross (1985:322) noted, "most studies on stress in nursing have been conducted within the ICU with little attention to the general medical surgical units or comparisons across various groups." This study was explicitly designed to explore the nature of stress endemic to critical care and medical-surgical nursing and to explore, in a global sense, the relationship between perceived stress and job satisfaction. As such, the insights gained from the study may reveal some information of practical importance.

Informed decisions for particular strategies to ameliorate stress in nursing rely on updated information about nurses and stress. With the nurses' perceptions of work-related stress and overall job satisfaction delineated, nursing administrators may identify specific areas of practice needing modification or further investigation. The findings of the study may generate ideas for topics relevant to stress and stress management which could be included in orientation, continuing educational sessions and staff development programs. It was also hoped that the study would serve as a resource for nurses and others simply wanting to learn more about stress in nursing.

Definition of Terms

A brief explanation of the terms frequently used in the study is provided to ensure clarity of meaning.

Stress: This term is defined as ". . . the experience of a whole range and mixture of unpleasant sensations: predominantly tension, anxiety, depression, frustration, and a feeling of being emotionally drained resulting from pressures or overburdening demands" (Jankovic, 1983:9).

Magnitude of stress: This term refers to the intensity and frequency of stressors experienced by an individual (Ratsoy & Friesen, 1985:3).

Overall work-related stress: This term describes, in a general sense, the extent to which nurses perceive their work to be stressful.

Job satisfaction: Job satisfaction refers to a person's positive feelings about the work situation.

Overall job satisfaction: This term describes, in a general sense, the extent to which nurses perceive their work to be satisfying.

Nursing unit: A nursing unit is defined as ". . . a geographic inpatient area of a hospital having a technological domain, an assigned number of beds, its own regular complement of nursing staff with shared goals, and a formal hierarchical structure; that is, it could be considered a bounded administrative and social unit" (Leatt & Schneck, 1980:35). Nursing unit and nursing specialty are used synonymously.

Critical care unit: A critical care unit houses particular supplies and equipment for the provision of specialized care for critically ill patients. Examples of critical care units include: intensive care units, coronary care units, cardiovascular surgical intensive care units, neonatal intensive care units, neurosurgical intensive care units, and pediatric intensive care units.

Medical-surgical unit: Any adult patient whose condition necessitates medical or surgical intervention is generally admitted to a medical or surgical unit respectively or to a combined medical-surgical unit.

Registered nurse (RN): A registered nurse refers to any person who has graduated from an approved school of nursing and is currently registered with the Alberta Association of Registered Nurses (AARN), the professional licencing body in Alberta.

Critical care nurse: A critical care nurse is a registered nurse employed within a critical care nursing unit of a hospital. Critical care and intensive care unit (ICU) nurse are used synonymously.

Medical-surgical nurse: A medical-surgical nurse is a registered nurse employed within a medical, surgical or combined medical-surgical unit of a hospital.

Staff nurse: A staff nurse refers to a registered nurse who occupies a staff nurse position within the formal organizational structure of the hospital.

Item: An item refers to a work-related situation which may be perceived as a source of stress. Sixty-five items are listed on the questionnaire used for the study.

Assumptions, Delimitations and Limitations

Assumptions

1. It was assumed that the nurses who would participate in this study have experienced work stress to some extent and, as such, are in a position to report their perceptions of stressful situations at work.

2. It was assumed that a questionnaire would provide insight into the nurses' experiences of work-related stress.
3. It was assumed that the work-related situations identified in the questionnaire represented the major sources of stress for both the critical care and medical-surgical staff nurses.
4. It was assumed that the study group were willing to relay their true feelings about stress at work.

Delimitations

1. The study was delimited to critical care and medical-surgical registered nurses within staff nurse positions in one tertiary care hospital in Alberta. Work situations that cause stress for staff nurses may also affect nursing administrators. However, they are also susceptible to stress associated with their administrative role; therefore, their exclusion from the study appeared warranted. Furthermore, to measure RN staff nurses' perceptions of stress, registered nursing assistants and nursing orderlies were similarly excluded from the study.
2. This study was designed to identify and compare work-related sources of stress as perceived by critical care and medical-surgical staff nurses. Sources of stress outside the work domain were not investigated.

Limitations

1. As RN staff nurses from selected nursing specialties of one hospital are included in the study, generalizations of the findings may be

restricted to the nursing units being studied in this particular hospital.

2. The timing of the study may have influenced the findings. The questionnaires were distributed shortly after the time of the planned move of several nursing units to a new hospital facility. All but three nursing units selected for the study relocated to the new facility over the summer months (June-July) in 1986. The three nursing units which did not move were already occupants in the new hospital facility.
3. The study was limited to the extent that the nurses' perceptions of work-related stress at the time of the study may not accurately reflect the stress experienced in reality.
4. The possibility that the researcher was known by some staff nurses from the critical care and medical-surgical nursing units may have influenced their responses. Respondents were requested not to reveal their identity on the questionnaire and all responses were treated confidentially.

Organization of the Thesis

An overview of the study was provided within this chapter. Following the introduction to the study, the discussion focused on the purpose, research questions and significance of the study. Also included for discussion were the definition of terms and assumptions, delimitations and limitations of the study. Chapter 2 contains a selected review of the literature related to the concept of stress, occupational stress, job satisfaction and stress in nursing. The research methodology of the study is described in Chapter 3 and the results of the study are presented in Chapter 4. Chapter 5 contains a summary of the study and the findings, conclusions and implications for practice and for further research. The questionnaire and the correspondence related to the study are included in the Appendices.

CHAPTER 2

REVIEW OF THE LITERATURE

A selected review of the literature is presented within this chapter. The review has been organized as follows: 1. an overview of what is meant by stress, 2. a discussion of potential occupational stressors, effects of occupational stress, and occupational stress and job satisfaction/dissatisfaction, 3. a discussion of stress in the nursing profession, and 4. a discussion of stress in critical care nursing.

Images of Stress

Stress is a term that is widely used, variously defined and frequently misunderstood. As Fraser (1983:13) stated, "because of its connotations and the diversity of its usage, stress has always been a difficult term to define." According to Selye (1980:127), stress ". . . is a scientific concept which has suffered from the mixed blessing of being too well known and too little understood." Similarly, Cox (1978) claimed that stress is an elusive concept. "It is a concept which is familiar to both layman and professional alike; it is understood by all when used in a general context but by very few when a more precise account is required . . ." (Cox, 1978:1).

Over the years, the concept of stress has attracted the interest of researchers from many and varied disciplines. For some researchers, stress refers to a stimulus condition (Cooper & Marshall, 1976; Kahn, 1974), while others refer to stress as a response to stressful conditions

(Levi, 1967; Selye, 1974), and still others refer to stress as the perceived discrepancy between environmental demands and ability to meet those demands (Cox, 1978; McGrath 1976). Furthermore, as Cameron and Meichenbaum (1982:695) pointed out, ". . . individuals within disciplines have thought about stress in different ways, studied different phenomena, used different methodologies, and made different assumptions." This conceptual and methodological diversity has created considerable confusion as to what stress really is and how it can be measured (Pinnell,1979). Moreover, this diversity has seriously limited generalizations and comparisons of research findings (Leatt & Schneck, 1980:33; Marshall & Cooper, 1979:10) and, hence, the integration of existing knowledge about the phenomenon of stress (Scott & Howard, 1970:265).

Confusion with the concept of stress is exacerbated further by what Cox (1978:25) referred to as " . . . a glut of interrelated and synonymous terminology in existence covering the area of stress research." Citing earlier work by Cofer and Appley (1964), Cox (1978) observed that confusion with terminology is not a new issue. Several years ago, Cofer and Appley (1964:449) claimed that the term stress was being used indiscriminately when they stated that "it is as though, when the word stress came into vogue, each investigator, who had been working with a concept he felt was closely related, substituted the word stress for it and continued in his same line of investigation." More recently, Hiebert (1985:11) reiterated the assertion that stress and related concepts are used synonymously when he stated that "confusion often results in the literature on stress because different authors use the same word to describe different phenomena." According to Hiebert (1985:11), accurate communication can only be achieved when writers ". . . define explicitly the way in which stress is being conceptualized."

McGrath (1982) expressed a particular concern with the term stress relative to its measurement. He alleged that stress is a pejorative term. "By the very choice of the word ***stress***, researchers have in effect asserted that the phenomenon they are studying is bad" (McGrath, 1982:35). In McGrath's (1982) opinion, the negative connotation associated with the word stress may in itself bias the interpretations and conclusions of research findings. Holt (1982:421), however, contended that the non-evaluative use of the term stress ". . . makes cross-study comparisons difficult."

Researchers have also debated the overall utility of the stress concept (Hinkle, 1974; Lazarus, 1966; McLean, 1974; Meister, 1981). Hinkle (1974), for instance, argued that the stress concept had been ascribed too much meaning to be heuristically valuable and suggested that the concept be abandoned. Other writers proposed that the term be used to denote a complex, interdisciplinary area of study. Lazarus (1966:27), for example, advocated using stress ". . . as a generic term for the whole area of problems that includes the stimuli producing stress reactions, the reactions themselves, and the various intervening processes." Similarly, in more recent years, McLean (1984:5) suggested that stress be considered in terms of ". . . a rubric that encompasses a stressor, acting on a very complex human organism, usually producing an unhealthy feeling . . . a stress reaction." Pearlin (1982:369) also supported the position of retaining the stress concept ". . . despite its problems and shortcomings." As he explained, "it is not unusual in science for the same concept to acquire diverse meaning and to recruit the interest of many disciplines. The confusion that inevitably results is forgivable and should not inhibit continued work at multiple levels" (Pearlin, 1982:369).

Conceptual Definitions of Stress

It is readily apparent from the literature reviewed that stress has been defined in three main ways: as a response, as a stimulus or as an interaction or transaction between the person and the environment (Cohen, 1985; Cox, 1975, 1978; Hiebert, 1985; Ivancevich & Matteson, 1980b; Lazarus, 1966; McGrath, 1970). As Hiebert (1985:11) noted, "although other conceptualizations are sometimes offered . . . virtually all ways of conceptualizing stress are subsumed by these three categories." Each of these categories vary significantly in their approach to the study of stress.

Response-based Definitions

Response-based definitions of stress focus on the response or pattern of responses manifested by the individual (Cox, 1978:4). As Derogatis (1982:272) explained, "it is the response of the individual to the events of the environment that is treated as defining the presence of stress." In essence, the response approach describes stress as what happens within the individual (Cox, 1975; Kyriacou & Sutcliffe, 1978).

Selye's (1974) physiological theory of stress is generally regarded as the forerunner of the response approach. According to Selye (1974:26), various stress-producing factors called stressors place demands on the body yet ". . . the body responds in a stereotyped manner . . ."; that is, a common physiological stress response occurs. Selye (1974:27) defined stress as ". . . the non specific response of the body to any demand made upon it." He explained this characteristic bodily response in terms of the General Adaptation Syndrome (GAS) which consists of three stages: the alarm reaction, the stage of resistance and the stage of exhaustion (Selye, 1974, 1983).

The alarm reaction is comprised of two phases: the shock phase which represents the body's ". . . initial and immediate reaction to the noxious agent" and the countershock phase in which there is "a rebound reaction marked by the mobilization of defensive phase . . . ." (Selye, 1983:4). Selye maintained that a continuous state of alarm is incompatible with life so the individual who survives enters the second stage, the stage of resistance. Resistance is characterized by successful adaptation to the stressor with concomitant improvement or disappearance of the physiological manifestations of the alarm reaction. However, when the stressor is severe and prolonged, the body's adaptability or adaptation energy cannot be sustained and, as a result, the individual enters the stage of exhaustion. Selye (1983:5) believed that adaptation energy ". . . is finite since, under constant stress, exhaustion eventually ensues." At this point, the physiological changes of the alarm reaction reappear and, if stress persists, death inevitably follows (Selye, 1983).

Selye (1983:2) noted that all stressors, pleasant or unpleasant, place unique demands on the body yet, irrespective of their specific effect, they all produce the non specific adaptive response. In other words, the nature of the stressor is immaterial; the important point is the intensity of the demand on the adaptive functions of the body. Selye also alleged that stress may be experienced as eustress, the pleasant, positive form of stress or distress, the unpleasant, harmful form of stress. In Selye's (1983:18) view, ". . . all distress, in general, that does not hold promise of eustress - is what is to be avoided."

Although many researchers have utilized the physiological response framework to analyze stress, others have expressed reservations about Selye's notion of non specificity. Several researchers have argued that the stress response is not uniform as Selye proposed but rather one which varies according to the nature of the stressor and the psychological characteristics of the individual (Cox, 1978; Everly & Rosenfeld, 1981; Lazarus, 1974; McGrath, 1976). In his discussion of integrating Selye's physiological approach with a psychological approach, Mikhail (1985) concluded that stress should not be defined in terms of its non specific response alone. "For a broader understanding of stress, specific responses are not less significant than the non specific ones" (Mikhail, 1985:38). Mikhail (1985:39) suggested that specific and non specific responses be considered as ends of a continuum rather than as dichotomous.

According to Hiebert (1985:12), a limitation of response models generally is that they do not explain why some situations are considered stressful whereas others are not. The response approach, as Lazarus and Folkman (1984:14) observed, does not allow for a ". . . systematic way of identifying prospectively what will be a stressor and what will not."

Stimulus-based Definitions

Stimulus-based definitions of stress describe stress as residing within the stimuli characteristics of the individual's environment (Cox, 1975, 1978; Derogatis, 1982; Ivancevich & Matteson, 1980b; Kyriacou &

Sutcliffe, 1978; McGrath, 1970). The assumption here is that environmental conditions considered disturbing or demanding for the individual impose stress upon that individual (Derogatis, 1982:272). In this sense, stress refers to a stimulus state capable of eliciting a stress response or as Cox (1975:493) stated, "stress is what happens to a person, not what happens within him."

This use of the term stress, as an external force or stimulus applied to a body, is analogous to its use in the engineering field (Cox, 1975; Hinkle, 1974; Ivancevich & Matteson, 1980b; Yates, 1979). The engineering model of stress holds that stress is created by the application of an external force or load which tends to distort or strain the body (Cox, 1975; Hinkle, 1974). If stress produces strain that falls within the body's elastic limit, bodily changes may occur but the body will resume its original stance once stress is removed as strain also disappears. If, however, stress produces excessive strain; that is, the strain exceeds the elastic limit, the body will incur some degree of permanent damage (Cox 1975, 1978). As Fraser (1983:14) explained, at this point "the stressed object changes its character and the resulting strain is not reversible. An elastic band, for example, will stretch beyond recovery."

The analogy implies that each individual has an inherent capacity or elastic limit to withstand stress but when stress becomes intolerable permanent physiological and psychological damage may result (Cox, 1975; Ivancevich & Matteson, 1980b). This analogy has been elaborated upon by Fraser (1983:14) in the following manner:

> As the stress increases, various physiological and psychological changes can be observed proportional to

> the stress, and significantly, reversible when the stress is removed. With still further increase in stress we enter the realm of pathology, beyond the level of adaptation, where the changes are not reversible, and some trauma, mental/or physical, results.

A stimulus-based definition of stress generally regards stress as an independent variable (Cox, 1978) and research is directed towards identifying stressful stimuli. According to Derogatis (1982:272),

> models based on this reasoning focus measurement efforts on the characteristics of the individual's environment (e.g., life events, time demands, external and internal noxious conditions) and attempt to utilize instruments that will accurately reflect cumulative environmental stress.

A weakness of the stimulus approach is that the intervening psychological processes that mediate the outcome of the stress-strain relationship are not considered (Cox, 1978). Common sense suggests that psychological processes are irrelevant in engineering terms but as Cox (1978:15) emphasized, human stress must be experienced; that is, "stress has to be perceived or recognised by man." Cox (1978) is also critical of the assumption that an undemanding situation is not stressful. Again, Cox (1978) claimed that the engineering analogy is misleading if applied to living organisms. In engineering terms, the absence of stress enhances the life of the structure but this truth is not demonstrated with living organisms (Cox, 1978; Kahn, 1970). Similarly, Clarke (1984:4) noted that the absence of or minimal stimulation does cause strain yet ". . . cannot be accommodated in a definition which treats stress as if it were a stimulus."

According to Lazarus and Folkman (1984:21), stimulus-based definitions of stress assume that certain environmental stimuli are inherently stressful but do not consider individual differences in the evaluation of stimuli. Furthermore, as Hiebert (1985:12) pointed out, the stimulus approach virtually ignores individual coping attempts. "No allowance is made for the fact that different people respond in different ways to the same situation" (Hiebert, 1985:12). In Clarke's (1984:4) view, the term stress simply cannot be used to denote a variety of environmental stimuli because, ". . . few stimuli reliably cause strain in all individuals."

Transactional Definitions

Transactional definitions ". . . focus on the interaction between the individual and his environment to determine whether stress will occur" (Kyriacou & Sutcliffe, 1978:2). As Cox (1975:494) explained, "according to this approach stress arises whenever there is an imbalance between the person's perception of the demand placed on him by his situation, and his ability to cope, when failing to cope is important." The perceptual element, central to the transactional perspective, serves to operationalize various person factors (e.g., personality) which in turn explain individual differences related to the stress experience (Cox, 1975).

Lazarus and his colleagues view psychological stress in transactional terms (Coyne & Lazarus, 1980; Holroyd & Lazarus, 1982; Lazarus, 1966; Lazarus & Folkman, 1984; Monat & Lazarus, 1977). Stress is typically referred to as ". . . any event in which environmental demands, internal demands, or both ***tax*** or ***exceed*** the adaptive resources of an individual . . ." (Monat & Lazarus, 1977:3). The individual's response to a demand is grounded in cognitive appraisal; an evaluative process in which the individual judges the significance of the event in terms of personal well-being (Lazarus & Folkman, 1984:31). Primary appraisal determines whether the event is irrelevant (has no significance), benign-positive (preserves or enhances well-being) or stressful. A stressful transaction is appraised further to determine whether it is one of harm (damage has already occurred), threat (harm or loss is anticipated), or challenge (the demand can be managed). Secondary appraisal represents the individual's evaluation of coping resources, options and constraints; that is, coping strategies are evaluated in terms of their costs and probability of success. The individual's response, including no response, alters the transaction in some way and as such provides feedback information, the basis for reappraisal (Coyne & Lazarus, 1980; Lazarus & Folkman, 1984). Although considerable emphasis is placed on cognition, stress is still viewed as a transactive process whereby ". . . environmental demands, cognitive appraisal processes, coping, and emotional response interpenetrate, each affecting the other" (Coyne & Lazarus, 1980:150).

McGrath (1976) also incorporated the transactional view in his description of stress from a social psychological perspective. McGrath (1976:1352) preferred not to define stress per se but rather the conditions needed ". . . before treating a situation as 'having' stress 'in' it." He described a stress situation in terms of a four-stage, closed-loop cycle (presented in Figure 2.1). The stress cycle begins as a situation or set of circumstances in the socio-physical environment. The situation becomes stressful only if the person perceives it as one

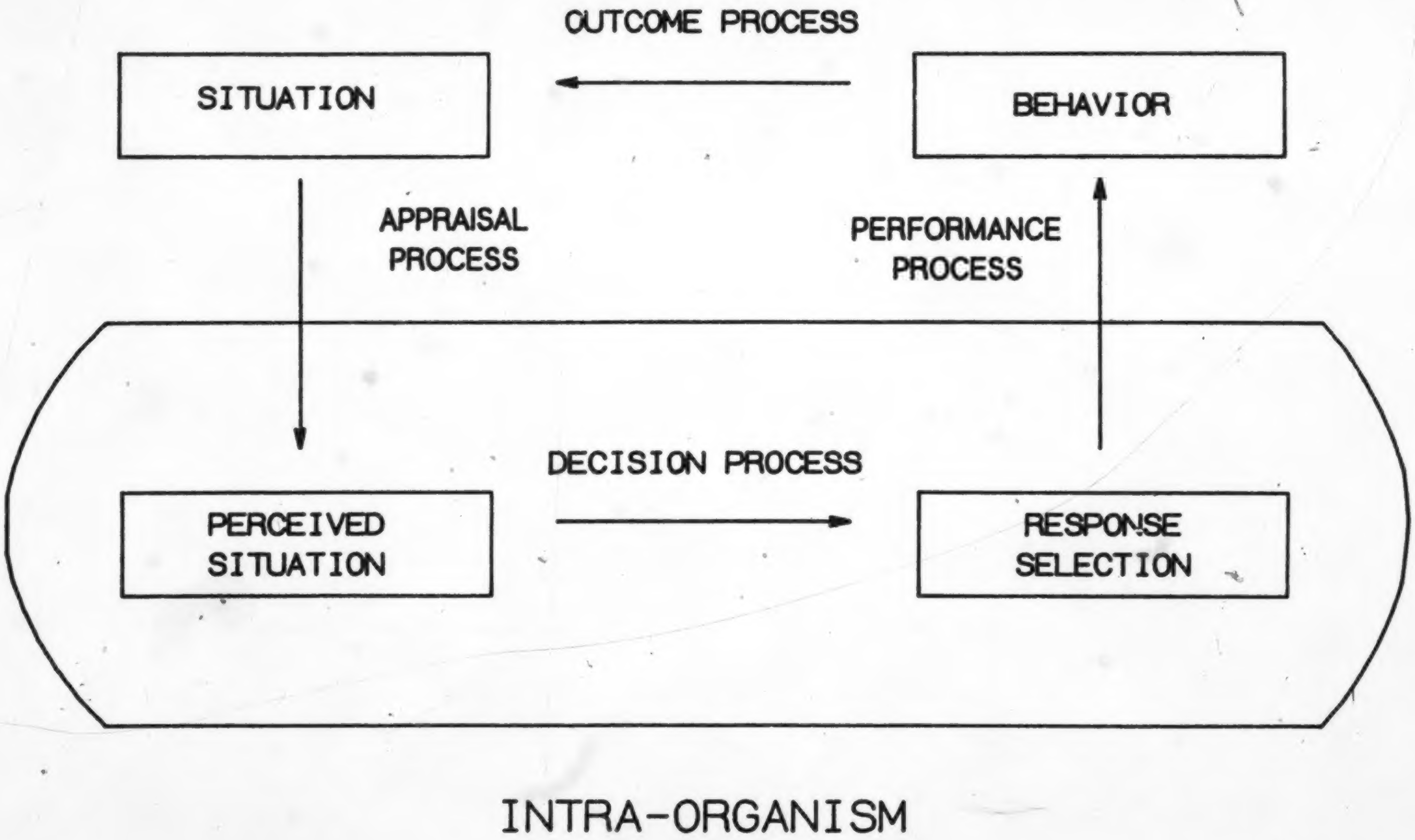
OUTCOME PROCESS
SITUATION
BEHAVIOR
APPRAISAL PROCESS
PERFORMANCE PROCESS
DECISION PROCESS
PERCEIVED SITUATION
RESPONSE SELECTION
INTRA-ORGANISM

Figure 2.1

A Stress Paradigm
(Adapted from McGrath, 1976:1356)

leading to undesirable consequences if left unaltered. The person then chooses and executes a response with the intent of changing his relationship with the situation. The response has some consequences for both the person and the situation, albeit these consequences may be unintended ones (McGrath, 1976).

The four stages of the stress situation are connected by four linking processes which, in essence, reflect the ongoing interaction between the person and the environment or as McGrath (1976:1372) stated, ". . . the individual's continuing - and ***two-way*** - interchange with his environment." The appraisal process, whether accurate or inaccurate, produces the subjective experience of stress. The decision-making process represents the person's interpretation of the situation in relation to available resources to cope with it and the eventual response choice. The response process, also called the performance process, refers to how the person has chosen to respond, the behavior. The effect of the person's behavior on the stressful situation is reflected in the outcome process. McGrath (1976) suggested that the outcome is not influenced by the person's performance or behavior alone but by many other factors not under the person's control.

Clearly, the transactional perspective holds that stress cannot be defined in terms of responses alone nor in terms of inherently stressful stimuli. Rather, transaction as Laux and Vossel (1982:208) stated ". . . means not only that the environment influences the person but also that the person is an active agent in influencing the environment." In this sense, many researchers contend that the transactional view offers a more realistic account of the dynamic stress experience (Cameron & Meichenbaum, 1982; Cox, 1975, 1978; Holroyd & Lazarus, 1982; Kyriacou & Sutcliffe, 1978; McGrath, 1976).

The Conceptual Model of the Study

The model of teacher stress developed by Kyriacou and Sutcliffe (1978) describes stress from a transactional perspective. Although the model was developed explicitly to explain teacher stress, it is well suited for study of other occupational groups. Jankovic (1983), for example, utilized the model in his study of school principal stress and Sands (1985) employed the model in her study of nurse educator stress. The Kyriacou and Sutcliffe (1978) model was also adopted as the framework for this study. The appealing feature of the model was that it explains how the antecedents, mediators and manifestations of stress interact to form the stress process. A schematic representation of the model is presented in Figure 2.2.

Kyriacou and Sutcliffe (1978) differentiated potential occupational sources of stress/stressors (box 1) from actual occupational stressors (box 3). Potential occupational stressors, the objectively defined aspects of work, may be psychological or physical in nature (e.g., poor working relationships, high noise levels) but some may be a combination of the two. Stress occurs only when potential occupational stressors are perceived as a threat to the individual's self-esteem or well-being (box 2). Potential occupational stressors appraised as constituting a threat are labelled actual occupational stressors. According to Kyriacou and Sutcliffe (1978:4), actual occupational stressors represent a subset of potential occupational stressors ". . . ***not*** what potential occupational

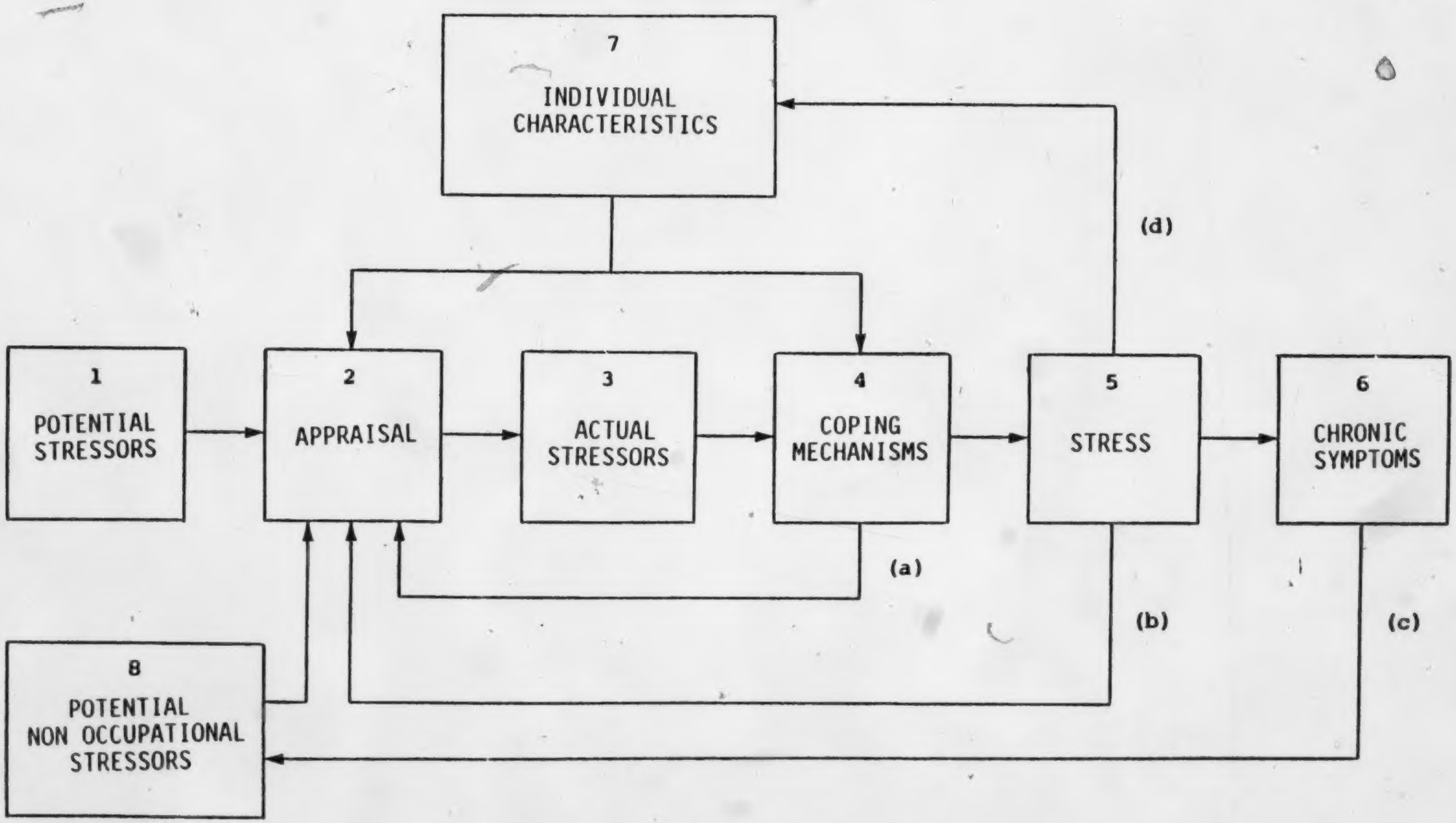
7
INDIVIDUAL CHARACTERISTICS
(d)
1
POTENTIAL STRESSORS
2
APPRAISAL
3
ACTUAL STRESSORS
4
COPING MECHANISMS
5
STRESS
6
CHRONIC SYMPTOMS
(a)
(b)
(c)
8
POTENTIAL NON OCCUPATIONAL STRESSORS

Figure 2.2

A Model of Teacher Stress
(Adapted from Kyriacou & Sutcliffe, 1978:3)

stressors become. In other words, actual occupational stressors are still firmly located in the teacher's environment, but are perceived differently (in constituting a threat) from the remainder of the set of potential occupational stressors."

The individual's perceptions and appraisal of potential stressors are influenced by a variety of individual characteristics such as: biographical details, personality traits, higher order needs, perceived rather than actual coping ability, and beliefs, attitudes and values (box 7). Appraisal may also be influenced by potential non-occupational stressors (box 8), the potential stressors outside the realm of work.

Coping mechanisms (box 4), determined in part by individual characteristics, are the strategies chosen by the individual to deal with actual stressors. Stress is conceptualized ". . . as being directly related to the degree to which the coping mechanisms are unable to deal with actual stressors, and the degree to which the teacher appraises threat" (1978:4).

Stress is further described ". . . as a response of negative affect . . ." (1978:5) which may be accompanied by physiological, psychological or behavioral changes referred to as response correlates of stress (box 5). Hypertension, high job dissatisfaction, and absenteeism are examples cited as potential manifestations of stress. Unabated stress may give rise to pathophysiological changes and chronic symptoms such as coronary heart disease and mental illness (box 6).

Four feedback loops represent the ongoing interaction among various components identified in the model. The first feedback loop (a) indicates that the coping strategy selected may influence the individual's appraisal of potential occupational stressors. If the chosen strategy is successful, the actual occupational stressor is relinquished to the status of potential occupational stressor. The experience of stress itself may affect appraisal directly, loop (b), or indirectly, loop (c), by causing ill health which then becomes a potential non-occupational stressor. Feedback loop (d) implies that failure to cope with demands may affect future appraisal of personal coping ability.

Potential Occupational Stressors

Although many writers indicated that their compilations of potential occupational stressors are not meant to be construed as being all inclusive, there appears to be general agreement on what constitutes the major sources of work-related stress (Brief et al., 1981; Cooper, 1981; Cooper & Marshall, 1976; Davidson & Cooper, 1981; Ivancevich & Matteson, 1980b; McGrath, 1976; Quick & Quick, 1984; Steers, 1981). Commonly identified categories of potential occupational stressors include: job demands, the individual's role in the organization, interpersonal relationships at work, the organizational structure and climate, and working conditions.

Job Demands

Steers (1981:346) acknowledged that all occupations are to some extent stressful but in high stress occupations individuals have little control over their work, work under unrelenting pressures or are primarily responsible for human or financial resources. Responsibility for people is reported to be more stressful than responsibility for things (Cooper & Marshall, 1976; Ivancevich & Matteson, 1980b; Steers, 1981). According to Cooper and Marshall (1976:18), "increased responsibility for people frequently means that one has to spend more time interacting with others, attending meetings, working alone and, in consequence . . . more time in trying to meet deadline pressures and schedules." Albrecht (1979:142) pointed out that workers who routinely interact with distressed people, such as people in personal crisis or injured people, ". . . often experience much greater accumulated stress than those who deal primarily with people whose lives are in good working order." Cherniss (1980) maintained that many human service occupations report high levels of work-related stress which readily manifests as burnout.

Gherman (1981) noted that when work is perceived as too easy or non-challenging the individual experiences stress. "An employee without adequate work to do usually begins to feel frustrated and anxious about his worth and position in the organizational hierarchy" (Gherman, 1981:25). Similarly, quantitative (too much work) and qualitative (difficult work) overload may be a source of stress (Brief et al., 1981; Cooper, 1981; Cooper & Marshall, 1976; Ivancevich & Matteson, 1980b). "In this type of job individuals are pushed past the limits of their physical, intellectual, or emotional abilities" (Brief et al., 1981:83). Work overload has been linked to several diverse symptoms of stress such as elevations in serum cholesterol levels, escapist drinking (Ivancevich & Matteson, 1980b), absenteeism from work, low self-esteem and low motivation to work (Margolis et al., 1974).

Role in the Organization

Brief et al. (1981:78) referred to an organizational role as a ". . . set of expectations applied to the incumbent of a particular organizational position by the individual and by others, both within and beyond the organization's boundaries." Common sources of stress related to an individual's occupational role include role conflict, role ambiguity and role over and underload (Brief et al., 1981; Steers, 1981).

Role conflict occurs when contradictory demands are made on a given role (Cooper, 1981; Quick & Quick, 1984; Steers, 1981). "The most frequent manifestation of this is when a person is caught between two groups of people who demand different kinds of behavior, or who expect that the job should entail different functions" (Cooper, 1981:23). Kahn (1974:52) reported that the emotional costs of role conflict include job-related tensions, lower job satisfaction and less confidence in the organization itself. Ivancevich and Matteson (1980b:111) claimed that "other difficulties, such as decreased quality of decisions made and reduction of creativity are very likely to result from the tension and anxiety associated with conflict."

Role ambiguity exists when individuals are uncertain of what is required of their roles. More specifically, role ambiguity occurs when role expectations, methods for fulfilling expectations or the consequences of role performance are unclear (Brief et al., 1981:81). According to Brief et al. (1981:81), "role ambiguity is stressful because it prevents individuals from completing important tasks and contributes to a sense of insecurity and uncertainty." The literature suggests that both role ambiguity and role conflict are pervasive in organizations and the effects of each are generally similar (Kahn, 1974; McGrath, 1976; Yates, 1979).

Role overload and underload are also associated with stress (Schuler, 1980; Steers, 1981). Role overload occurs when individuals perceive their role responsibilities as overwhelming in light of available time or ability whereas role underload or underutilization occurs when individuals utilize few of their skills and abilities to meet work demands (Steers, 1981). The least amount of stress, according to Steers (1981:351) occurs at the point ". . . where an employee's abilities and skills are in balance with the requirements of the job." Van Harrison (1978), however, cautioned against assuming that a perfect fit between the individual's abilities and demands of the job produces the least stress. In Van Harrison's (1978:202) view, ". . . small discrepancies may be experienced as being equally pleasant or more so than perfect fit."

Relationships at Work

Cooper (1981:26) identified the nature of relationships with one's boss, subordinates and colleagues as a major source of occupational stress. According to French and Caplan (cited in Cooper, 1981:26), poor relations are ". . . those which include low trust, low supportiveness, and low interest in listening and trying to deal with problems that confront the organizational member." Research has shown that mistrust among people at work is associated with high role ambiguity, inadequate communication and low job satisfaction (Cooper, 1981).

Ivancevich and Matteson (1980b:129) maintained that interpersonal conflict within an organization is inevitable but "dysfunctional conflict cuts off free-flowing interaction and can result in felt stress." Brief et al. (1981) reported that a lack of social support can intensify the experience of stress. "Employees under similar stress environments experience less serious levels and symptoms of stress if they work in a supportive group, than if they work alone or in an unsupportive group"

(Brief et al., 1981:133). McLean (1979) also indicated that supportive work relationships can reduce the effects of stress on physical and mental health. He stated that ". . . perceived stressors bear little or no relationship to ill health when a person enjoys high levels of social support, but when social support is low, symptoms of ill health are high" (McLean, 1979:93).

Organizational Structure and Climate

Another potential source of work-related stress cited by Cooper and colleagues is related to organizational structure and climate which includes such dimensions as little or no participation in decision making, lack of effective consultation, restrictions on behavior, and office politics (Cooper, 1981; Cooper & Marshall, 1976; Davidson & Cooper, 1981). There is considerable evidence suggesting that the degree of participation in decision making influences the extent to which stress is experienced. Cooper and Marshall (1976:22), for example, reviewed several studies on employee participation and found that greater participation is associated with high productivity, high performance improvements and lower staff turnover whereas non-participation is linked to lower job satisfaction and greater risks to physical and mental health. As Steers (1981:353) noted, increased participation in decisions affecting one's work ". . . seems to be an important factor in reducing various dysfunctional psychological and behavioral reactions to the workplace."

Centralization in an organization is closely related to employee participation. "***Centralization*** of decision making and authority means that the power of making decisions is limited to a small proportion of employees, specifically those at the highest levels of the organization"

(Brief et al., 1981:76). According to these authors, employees excluded from decision making generally lack legitimate power within the organization which in turn ". . . causes many employees to feel alienated, powerless, meaningless, and isolated both from themselves and from their work and organizations" (1981:77).

Another organizational characteristic relevant to job stress is the individual's position within the organizational structure (Cooper & Marshall, 1976; Schuler, 1980). Schuler (1980:198) stated that "the general findings suggest that most stress, holding other organizational qualities constant, occurs for individuals in managerial positions and those in the health care professions." It may be as Schuler (1980) pointed out, that individuals who occupy these kinds of positions experience high uncertainty and stress simply because they are more dependent upon others than vice versa for the fulfillment of certain needs related to their position (e.g., sense of responsibility and autonomy).

Working Conditions

Certain features of the work environment and conditions of work have also been found to be stressful. Included in this category are stressors in the worker's physical environment, shift work and technology.

Commonly identified physical stressors include extremes of noise, light and temperature, air pollution, crowding and insufficient workspace. Traditionally, research has focused on how the physical properties of such environmental conditions are related to stress. However, in more recent years, researchers have suggested that environmental stressors may produce stress not because of their physical properties per se but because of their meaning to the person (Baum et al., 1981; Cohen, 1986). Cohen

(1986:65) argued that ". . . the physical characteristics of a potential environmental stressor are generally less important determinants of whether one is stressed than the psychological properties of the overall situation." In Locke's (1976:1324) view, physical working conditions ". . . unless they are extremely good or bad, are usually taken for granted by most employees." It would appear then, that individuals are likely to experience some degree of stress if they perceive working conditions to be unsatisfactory whereas satisfactory conditions lead to indifference.

Shift work, also referred to as non-standard hours of work (Holt, 1982), is another potential stressor for individuals employed in organizations required to operate 24 hours a day. It is well established that shift work conflicts with circadian rhythms and disrupts social living (Holt, 1982; McDonald & Doyle, 1981). Smith (1981:15) reported that shift work, notably night and rotating shift schedules have ". . . a significant impact on health and safety, affecting such diverse areas as industrial injury incidence, worker sleeping and eating patterns, and family and social-life satisfaction." According to Holt (1982:424) an estimated ". . . 20% of workers cannot adapt to shift work."

Technological advances have brought forth many changes in the workplace which in turn may be a potential source of stress for some workers. Stress may be experienced when new technology jeopardizes job security or changes the nature and pace of the work itself (Carroll, 1981). Rice (1987) cited job obsolescence as another potential problem facing workers in technological society. Steers (1981:10) noted that technological changes ". . . occur and recur with alarming frequency, creating anxiety among members of the workforce who don't know how such changes will affect them."

The Effects of Occupational Stress

The literature linking occupational stress to poor health and well-being is considerable. Symptoms may be physiological (e.g., elevated serum catecholamine levels, headaches), psychological (e.g., boredom, job dissatisfaction), or behavioral (e.g., alcohol abuse, turnover) in nature (Beehr & Newman, 1978; Brief et al., 1981; Kyriacou & Sutcliffe, 1978; Rice, 1987; Schuler, 1980). This classification of symptoms into three groups suggests, as Schuler (1980:200) pointed out, ". . . a discreteness in their occurrence . . . " but ". . . they may be highly interrelated." Experienced over time, these symptoms may eventually give rise to irreversible physical (e.g., hypertension) and/or mental (e.g., chronic depression) illness. Prolonged stress may result in burnout, defined by Maslach (1982:3) as

> . . . a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind. It is a response to the chronic emotional strain of dealing extensively with other human beings, particularly when they are troubled or having problems.

Reactions to occupational stress may also have adverse effects for the organization itself. Organizational effectiveness, for instance, may be impaired by low productivity, interpersonal conflict, absenteeism, errors, accidents and reduced organizational commitment and loyalty. "As with individuals, the ultimate negative response for organizations who fail to successfully adapt to stress can be death" (Siler-Wells, 1987:139).

Occupational Stress and Job Satisfaction

Locke (1976:1300) defined job satisfaction as ". . . a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." According to Fraser (1983:24), job satisfaction ". . . exists when the perceived benefits of the work exceed the perceived costs by a margin deemed by the worker to be adequate under the circumstances." Job dissatisfaction, on the other hand, is usually indicative of problems in the workplace.

According to Rice (1987:209), the most predictable psychological outcome of occupational stress is job dissatisfaction. "When this occurs, the person feels little or no motivation for going to work, for doing a good job while at work, or for continuing on the job" (1987:209). It would seem reasonable to assume that efforts to reduce or eliminate occupational stress would in turn enhance job satisfaction. However, a highly stressful job may be dissatisfying for some but satisfying for others. Thus, it is conceivable that the relationship between occupational stress and job satisfaction is not as simple as it appears (Burke, 1976; Fraser, 1983; Sen et al., 1981). Fraser (1983) described this relationship in terms of a bell-shaped curve. "The greatest satisfaction is found where the stress level is optimum. As you remove desirable features or add undesirable features the level of satisfaction drops through a zone of indifference until finally it becomes dissatisfaction" (Fraser, 1983:57-58). Fraser's contention implies that the effect of stress on job satisfaction is mediated to some extent by the presence or absence of other variables. In other words, stress experiences may have adverse effects on job satisfaction but only under certain conditions.

Theories of Job Satisfaction

The Needs Hierarchy Theory

Although not intended to be a theory of job satisfaction per se, Maslow's (1954) needs hierarchy theory explains the relative importance of individual needs and motivation to job satisfaction. Maslow (1954) proposed that people are motivated by five basic needs: physiological, safety, social, esteem and self actualization. These needs are arranged in a hierarchy of prepotency or order of dominance with physiological needs at the base of the hierarchy and self actualization needs at the apex. In Maslow's (1954:105) view, ". . . a satisfied need is not a motivator"; therefore, higher order needs emerge only after lower order needs are satisfied. For example, an individual would not respond to the need for self actualization unless all other needs were partially fulfilled. When applied to the work setting, the theory suggests as Locke (1976:1308) succinctly wrote that "the optimal job environment for a given employee would be the one which corresponded most closely to his position on the need hierarchy." According to Fraser (1983), the lower order needs (physiological and safety needs) are largely fulfilled in industrial society; therefore, the focus should be on the satisfaction of the higher order needs. For this reason, many writers advocate creating jobs that provide opportunities for autonomy, responsibility, challenge and creativity.

The Dual-Factor Theory of Job Satisfaction

Using the critical incident technique, Herzberg et al. (1959) asked employees to describe incidents that made them feel exceptionally good or exceptionally bad about their jobs. Certain intrinsic or work-related factors such as the work itself, responsibility, achievement, recognition and advancement were found to be associated with job satisfaction but not to job dissatisfaction (1959:80). These intrinsic factors were labelled motivators as they were viewed to be important for motivating performance. On the other hand, when the employees expressed dissatisfaction with their jobs, they described the context in which jobs were performed or extrinsic factors such as: salary, benefits, job security, interpersonal relations, policies and administrative practices, physical working conditions and supervision (Herzberg et al., 1959:113). Extrinsic factors were labelled hygiene factors.

According to the theory, the factors that lead to job satisfaction are distinct from those that produce job dissatisfaction. Satisfaction occurs not because hygiene factors are met but rather because motivators are gratified. When motivators are absent, the individual is neither satisfied or dissatisfied. Gratification of hygiene factors prevents job dissatisfaction but does not create job satisfaction. Herzberg et al. (1959) held that jobs should be structured so as to maximize motivators. Opportunities for challenge, responsibility, authority, control and achievement are thought to increase motivation and job satisfaction ". . . because they satisfy the individual's need for self-actualization in his work" (Herzberg et al., 1959:114).

Job Dissatisfaction - A Response Correlate of Work-Related Stress

Job satisfaction, according to the motivational needs theories proposed by Maslow (1954) and Herzberg et al. (1959), is the result of need fulfillment in the job. Because needs may be different from one individual to another or over different stages in an individual's career, so too may the level of job satisfaction vary. Many researchers claim that job satisfaction is affected by work-related stress; that is, as stress increases, job satisfaction decreases. Overall, as Fraser (1983:54) noted, ". . . there is a strong evidence suggesting, although perhaps not proving, a causal relationship between work stress and resulting dissatisfaction . . ." The relationship in Fraser's (1983:54) view, ". . . is far from simple. It involves genetic tendencies and personality factors in the individual, as well as significant stress in the physical and psycho-social environment."

Stress in Nursing

A review of the literature indicated that nursing is generally recognized as stressful. As Milazzo (1988:52) observed, some sources of stress in nursing are also found in other occupations but ". . . there are some unique stressors in nursing which exist just by virtue of the profession."

Scully (1980) cited the unrealistic expectations that nurses hold for themselves as the greatest source of stress in nursing. Nurses are particularly vulnerable to stress and burnout when they internalize the professional identity that nurses should be all things to all people

(Scully, 1980; Smythe, 1984) and when they do not allow themselves to appear less than perfect, an attitude especially common among critical care nurses (Gillis, 1985; Price & Murphy, 1985). According to Price and Murphy (1985:115), "the need to be perfect contributes to disillusionment and despair because those who try to be perfect fail; those who pretend to be perfect are brittle with concern lest they be found out." In Marshall's (1980) view, dealing with illness, death or any other patient condition may threaten the nurse's sense of competence and may remind nurses of their own mortality. Chronic exposure to these threats results in ". . . a job unusually high in potential stressors" (Marshall, 1980:21).

Marshall (1980:21) also identified ". . . the strength of sanctions against showing symptoms of stress" as a distinctive feature of stress in nursing. Nurses are expected to provide physical and emotional support to patients while simultaneously maintaining a professional image, one who is in control of emotions so as not to impair professional judgment or appear weak. As Marshall (1980:21) stated,

> a central requirement of her role is that she should show no signs of stress - maintaining a 'detached concern' and remaining calm even during emergencies. These expectations apply not only in front of patients and relatives - the 'clients' of the hospital system - but in front of other members of staff, at least whilst on duty.

Maintaining this psychological distance from patients and families may jeopardize the nurse-patient relationship and represent a source of stress for nurses. Appelbaum (1981) noted that when health care professionals have difficulty dealing with patients they usually minimize the contact by removing themselves physically and/or emotionally. "This results in poor health care for patients and feelings of inadequacy and greater stress for professionals who cannot deal with this aspect of their career conflict" (Appelbaum, 1981:117).

Hudak et al. (1982) contend that constant burying of feelings is abnormal and suggested that nurses be socialized towards a more humanistic approach. According to Jacobson (1983c:104), ". . . professionals need to achieve a certain objectivity and distance from the situation without losing their concern for the client." By engaging in some form of distancing such as intellectualization, physical withdrawal or using professional jargon, nurses protect themselves from becoming over involved with patients and their work (Appelbaum, 1981; Jacobson, 1983c; Maslach, 1982; Vachon, 1987). Although distancing techniques serve a useful purpose, ". . . their overuse precludes effective caring and progresses to dehumanization and burnout" (Jacobson, 1983c:106).

As most nurses are employed within a health care agency, there is potential for professional-bureaucratic conflict which may be stressful for nurses (Appelbaum, 1981; Gunning, 1983). Through the process of professional socialization, nurses are taught to provide comprehensive, individualized patient care and encouraged to develop autonomy, judgment and decision making qualities (Schmalenberg & Kramer, 1982). Essentially, nurses are taught to act in the best interests of their patients; that is, to meet patient needs but as employees they are expected to meet organizational needs, to perform their role according to the directives set by the health care agency. As a result, many nurses find that they are confronted with a conflict of loyalties (Gunning, 1983). According to Appelbaum (1981:123), "this conflict often is experienced in the form of deprivation because it is the variance between the ideal role concept that nurses envision and what actually is in operation in the work situation when they enter the organization." When the work situation is perceived as hampering the nurse's ability to provide the quality of care patients deserve, nurses become dissatisfied with nursing (Gunning, 1983).

The very essence of what nurses do may be stress producing. Nurses frequently perform tasks that are generally considered unpleasant or loathsome (Crickmore, 1987; Marshall, 1980; Menzies, 1960; Sands, 1985; Scully, 1980). "Nurses deal with various body exudates, touch strangers physically and emotionally in the most private areas, and frequently confront the greatest fear of our culture: death" (Sands, 1985:26).

Nurses commonly acknowledge staff shortages and overwhelming workloads as chronic stressors (Gentry & Parkes, 1982; Hoffmann, 1981; Jacobson, 1983b; Marshall, 1980; Muff, 1984). Under these conditions, standards of care may be compromised, causing additional stress (Marshall, 1980). Potential sources of stress related to workload include: performing non-nursing tasks (Gray-Toft & Anderson, 1981; Lachman, 1983), documenting the details of patient care because of liability concerns (Rozovsky & Rozovsky, 1985; Sklar, 1984), not having enough time to complete tasks (Ivancevich & Matteson, 1980a; Pines & Kanner, 1982), nor to provide emotional support to patients (Gray-Toft & Anderson, 1981; Pines & Kanner, 1982) or families (Bishop, 1981; Marshall, 1980), and the increased complexity of patient care (Gillis, 1985; Lachman, 1983).

Within the ICU, patients and supporting equipment must be constantly monitored and, hourly or more frequently, reports must be entered in the appropriate records. The often changing status of patients demand immediate and accurate decisions and actions by nurses. The workload is characterized by repetitive routines interspersed with emergencies but the work pace of the unit is highly unpredictable (Hay & Oken, 1972; Hoffmann, 1981). As a result, staffing often becomes a problem. Recognizing the specialized nature of ICU nursing, Marshall (1980) does not consider calling in untrained temporary help as an appropriate measure to relieve staff shortage in the ICU. Yet, in reality, inexperienced nurses are frequently "floated" to the ICU setting (Bourbonnais & Baumann, 1985; Vachon, 1987). As Bourbonnais and Baumann (1985:87) pointed out,

> this situation is an additional stressor for critical care nurses, because they are required not only to make rapid decisions for their own patients, but also to make decisions in crises that the float nurse is not able and should not be expected to handle.

Because nursing service within a hospital setting must be available 24 hours a day, nurses feel guilty when they inadvertently increase the workload of their peers (Marshall, 1980). Furthermore, as Hudak et al. (1982:508) pointed out,

> a nurse who legitimately refuses to work a double shift, float to another unit, or take on extra assignments because of chronic understaffing is usually not as popular with supervisors as one who denies his or her own needs and acquiesces immediately.

Consequently, strained relationships with supervisors may ensue.

Certain aspects of the nurse's role may be perceived as stressful. Unlike other health care providers, nursing staff must be present on the unit at all times. A major role stressor, particulary among ICU nurses is this close proximity to the unit's stressors (Vachon, 1987).

Nurses occupy a pivotal role in health care institutions. As Levenstein (1985:58) noted, "the fundamental reality in a hospital is that the nurse stands at the hub of the whole enterprise and ultimately functions across departmental boundaries." As occupants of a boundary-spanning role, nurses may be subjected to conflicting loyalties, responsibilities and expectations. Nurses may experience uncertainty with respect to their responsibilities during non-standard work hours (Gunning, 1983; Marshall, 1980; Vachon, 1987). Vachon (1987:78) pointed out that ". . . what nurses are expected to do during the busy day shift when all the other members of the health care team are present may be very different from what they are expected to do on evenings and nights when other staff are at home." Furthermore, many functions previously performed by medical staff have been delegated to nurses and has resulted in what Marshall (1980) referred to as a blurring of roles. Because most medically transferred functions have been assumed by critical care nurses, the problem of role ambiguity may be more pronounced in the critical care units. Ethical issues may heighten the nurse's awareness of professional and personal value differences which may be perceived as stressful. If the gap between professional and personal values is too wide, nurses may choose to leave nursing (Thompson et al., 1983).

Within the last 30 years, the nursing sector has witnessed an array of events which have challenged and changed the roles and responsibilities of nurses. Of critical importance to many contemporary nurses is autonomous practice (Gunning, 1983; Numerof, 1983). Yet, the image of the nurse as dependent, submissive and passive remains, to some extent, both within and outside the nursing profession (Gunning, 1983; Muff, 1984; Numerof, 1983). According to Muff (1984:14-15), ". . . socialization and identity issues produce stress in subtle ways . . .". Conflicts among nursing staff and between nurses and physicians have been identified as major stressors for nurses (Anderson & Basteyns, 1981; Bailey et al., 1980; Bishop, 1981; Gray-Toft & Anderson, 1981; Hay & Oken, 1972; Marshall, 1980; Oskins, 1979).

Tensions in relationships with nursing colleagues may be due to what Scully (1980) referred to as the "how" of nursing. "Efficient and effective patient care requires that members of the nursing team work together toward common goals. Yet this meshing of individual and group efforts in a manner that yields satisfaction for all is an objective not easily met" (Scully, 1980:913). Nurses may experience stress because of changes in the composition of the group. Newly employed nurses must learn the norms of the group whereas nurses already employed may resent becoming the more senior nurses with implicit increased responsibility while simultaneously wanting to do so (McConnell, 1982). Alternatively, when staffing in the unit is stable, interpersonal conflicts may occur between individual nurses, between nurses of different shifts (McConnell, 1982; Muff, 1984), or between nurses of different units (Cassem & Hackett, 1972; Hoffmann, 1981).

Another potential source of stress related to collegial relationships is lack of peer support (McConnell, 1982; Muff, 1984). McConnell (1982:114-115) noted that nurses tend to alienate themselves from each other; that is, "they keep their feelings inside, and they do not encourage others to verbalize feelings and concerns, either." This lack of sharing may be perpetuated by the nurse's own need to maintain a professional front (Marshall, 1980) or, as Price and Murphy (1985:117) stated, "the lack of structured opportunities for such sharing . . ." .

Conflicts between staff nurses and senior nursing administrators may also be perceived as stressful (Cronin-Stubbs & Velsor-Friedrick, 1981; Gray-Toft & Anderson, 1981; Hoffmann, 1981; Marshall, 1980; McConnell, 1982; Muff, 1984; Scully, 1980). These conflicts may be attributed to communication problems which encompass such dimensions as: the amount of direct communication staff nurses have with administrators (Albrecht, 1982), the lack of feedback nurses receive from superiors (Nichols et al., 1981), and ". . . the lack of recognition of expertise in a particular area" (Vachon, 1987:69). Critical care nurses, in particular, tend to view administrators as non-supportive; they are perceived as being unfamiliar with the unique nature of critical care units and as lacking the expertise for making clinical decisions (Cassem & Hackett, 1972; Hay & Oken, 1972; Hoffmann, 1981; Jacobson, 1983b). According to Marshall (1980:44), "ICU nurses may be discouraged from asking for advice from supervisors who they see as less technically competent than themselves and, anyway, unsympathetic to their problems."

Numerof (1983) noted that some health care administrators and physicians still retain archaic views of nursing. "Many believe that nurses are overeducated for their roles and as a result they actively discourage their participation in decisions related to their practice" (1983:178). Others advocate interprofessional collaboration and are concerned that nurses are not adequately prepared for their role in patient care. In Numerof's (1983) view, these dichotomous perspectives are likely to generate stress for nurses working in hospitals.

Conflicts between nurses and physicians may arise over issues related to authority. By virtue of their close patient contact, nurses are able to monitor the patient's progress or response to treatment but they do not have the " . . . authority to make independent professional decisions about patients" (Gunning, 1983:121). Jacobson (1983b:72) explained these nurse-physician problems in terms of a double edge sword whereby ". . . nurses are blamed for failing to inform the physician of pertinent facts but are either ignored or ridiculed for overstepping their role if they do so." For many nurses, non-participation in decisions involving patient care is stressful. "When nurses believe that physicians are not listening to their concerns and suggestions about patients, they feel as if in a bind: committed to constant assessment of the patient's condition, yet unable to influence action based on that assessment" (Scully, 1980:913).

According to some writers (Hay & Oken, 1972; Price & Murphy, 1985; Stillman & Strasser, 1980; Storlie, 1979), nurses who care for critically ill patients are particularly vulnerable to stress. Bishop (1981:18) stated that "working with seriously ill patients (often unconscious or delirious) prevents the ordinary contacts which are part of normal human relationships." The patient's inability to communicate for whatever reason hampers the nurse's efforts to establish a rapport with him or her. Within the ICU setting, the constant turnover of patients compounds the difficulty of establishing rapport (Marshall, 1980). Repetitive exposure to death and dying may also be stressful for critical care nurses.

"Frequent deaths mean the nurse is continually facing the loss of patients which may give rise to feelings of anxiety, anger, failure, or guilt" (Marshall, 1980:43). In Bishop's (1981) view, ICU nurses often respond to such feelings by becoming preoccupied with the technological gadgetry and letting it become more important than the patient or by adopting a no-nonsense, officious attitude.

It is not unusual for patients to be admitted to the ICU and placed on life support assistance for the sole purpose of prolonging life. "This is a difficult situation for all health care professionals concerned and perhaps reflects society's inability to understand all the ramifications of medical technology" (Bourbonnais & Baumann, 1985:88). The situation of the critically ill patient who has virtually no hope for survival is further complicated when life threatening events (e.g., cardiac arrest) occur. For the ICU nurses who provide continuous direct care to these patients for eight, ten or 12 hours a day, these situations often represent unremitting stress. "Despite all the variety of means by which one 'distances' or defends against emotional depletion, giving care to those who are losing their health, their bodily integrity, and, in many cases, their lives is very stressful" (Price & Murphy, 1985:114).

Stress in Critical Care Nursing

Although nursing is generally acknowledged to be stressful, most research focuses on stress experienced by critical care nurses. Interest in critical care nursing stress has continued unabated for nearly 30 years, since the 1960s when intensive care units were established to provide specialized care to critically ill patients. Subsequent specialization of intensive care health services led to the development of specific types of critical care units such as: coronary, pediatric, neurosurgical, cardiovascular, and neonatal intensive care units. Since their inception, critical care units have been portrayed ". . . as environments fraught with potential stress for nurses" (Stehle, 1981:182) and widespread concern has been expressed for the well-being of critical care nursing staff.

The primary objectives of early stress studies were to substantiate critical care nursing as stressful (Stehle, 1981) and to identify and rank-order the stressors (Bailey & Bargagliotti, 1983). Although some of these early reports were based on observational data (e.g., Hay & Oken, 1972; Vreeland & Ellis, 1969), the majority of studies use a quantitative methodological approach. A variety of instruments for measuring stress have been reported in the literature; however, information pertaining to the reliability and validity of many tools is limited (e.g., Anderson & Basteyns, 1981; Cassem & Hackett, 1972). Unlike studies done in the past, most current critical care stress research is guided by a theoretical framework. The prevailing view among researchers is that stress in nursing is best understood from a transactional perspective (e.g., Bailey et al., 1980; Leatt & Schneck, 1983; Norbeck, 1985; Oskins, 1979; Vachon, 1987).

Sources of Critical Care Nursing Stress

The majority of studies reported in the literature focus on identifying the major sources of stress for critical care nurses. The Cassem and Hackett (1972) study was one of the earliest studies to attempt quantitative assessment of stresses experienced by critical care nurses. Sixteen coronary care nurses from one American hospital were surveyed by means of a 44 item questionnaire. The nurses were asked to rate the items according to the frequency (occasional, frequent, always) and magnitude (mild, moderate, severe) of conflicts experienced. The combined scores of frequency and severity revealed that the major stressors included: heavy lifting, intra-aortic balloon research on patients, unpredictable scheduling and feelings of personal responsibility, overwrought and anxious families, and the hectic pace of the unit. However, the small sample size and the absence of information related to the reliability and validity of the questionnaire limited the generalizability of the findings.

In a review of critical care nursing stress literature, Stehle (1981:184) noted that "periodically, schemes for categorizing critical care stresses were presented." Although not included in Stehle's (1981) review, the Huckabay and Jagla (1979) study is notable in this respect. From the literature, Huckabay and Jagla (1979) identified four general categories of intensive care unit stressors: interpersonal communication problems, extensive knowledge base, the ICU environment and patient care requirements. Four components for each of the above stressor categories were also identified. In other words, the extensive knowledge base category, for example, was described in terms of patient teaching, cardiac arrest, the number of quick decisions that need to be made, and the amount of knowledge required to function in the ICU. Two situational questions for each component of stress were included in the questionnaire. Content validity was addressed through the literature and by a five judge panel agreement of 80 percent. Split-half reliability was .79 ($p<.01$). Forty-six full-time ICU nurses, with at least six months work experience, from six Los Angeles and vicinity hospitals, were asked to rank order the items from most to least stressful.

The highest ranked stressors were: 1. workload and amount of physical work, 2. death of a patient, 3. communication problems between staff and nursing office, 4. communication problems between staff and physicians, and 5. meeting the needs of the patient's family. These findings were discussed in terms of Janis's theory of how perceptions of stress are influenced by one's knowledge about the stressor and Lefcourt's locus of control theory whereby a person's perceived degree of control is inversely related to the degree of stress experienced. The researchers also reported a significant inverse correlation between years of ICU experience and the stress factor score. They concluded that neophyte ICU nurses have not acquired the knowledge and skills needed to work in ICU and, as a result, experience higher levels of stress.

The Bailey et al. (1980) study represents one of the most comprehensive studies of stress in critical care nursing. According to these researchers, a high attrition rate and an acute shortage of ICU nurses provided the impetus for their study to identify the nurses' perceptions of stressors at work. The conceptual framework adopted was Lazarus's view of stress as a person-environment transaction mediated by cognitive appraisal (Bailey, 1980). Eighteen hundred American nurses from a national and regional sample were surveyed by means of a free response questionnaire. The questionnaire was designed to elicit ICU nurses' perceptions of stressors and satisfiers at work so that critical factors of ICU nursing could be established.

The results of the study revealed that the stressors identified produced seven categories of stress: 1. management of the unit, 2. interpersonal relationships, 3. patient care, 4. knowledge and skills, 5. physical work environment, 6. life events, and 7. lack of administrative rewards. Furthermore, over 80 percent of the respondents identified stressors that fell within the first three categories. Four categories of satisfiers were also identified: 1. patient care, 2. knowledge and skills, 3. interpersonal relationships, and 4. administrative rewards. The respondents indicated that the sources of greatest satisfaction were within the patient care, knowledge and skills, and interpersonal relationships categories. Because the patient care and interpersonal relationships categories were viewed both as major stressors and satisfiers, Bailey et al. (1980) concluded that perception is the key ingredient in identifying stressors and the findings lend support to Lazarus's transactional theory of stress.

Comparative Stress Studies of Critical Care and Non-Critical Care Nurses

Gray-Toft and Anderson (1981) hypothesized that the sources and frequency of nursing stress were related to the types of units studied, educational background of nursing staff, levels of trait anxiety and sociodemographic characteristics. Trait anxiety, a personality characteristic, was measured to determine the nurses' predisposition towards anxiety. The researchers also hypothesized that high levels of stress would result in lower job satisfaction and high turnover. The sample consisted of 122 registered nurses, licensed practical nurses and nursing assistants from five different clinical areas of one American hospital: medicine, surgery, cardiovascular surgery, oncology and hospice. The Nursing Stress Scale, the IPAT Anxiety Scale and the Job Description Index instruments were used to measure stress, trait anxiety and job satisfaction, respectively.

Gray-Toft and Anderson (1981) found that the major sources of stress for all nurses, regardless of clinical setting or educational background, were workload, dying patients and feeling inadequately prepared to meet emotional needs of patients and their families. Since caring for critically or terminally ill patients is frequently depicted as stressful, the researchers expected to find that nurses from the hospice, oncology and cardiovascular surgical units would experience more frequent stress, greater job dissatisfaction and greater staff turnover than nurses from the medical or surgical units. However, medical nurses had the highest total stress and trait anxiety scores and reported the least amount of job satisfaction. Differences in the frequency of stress experienced by the nurses, particularly medical and hospice nurses, were explained by the structural characteristics of these units in terms of such dimensions as role ambiguity and conflict and by personality differences in terms of the trait anxiety dimension. The nurses who experienced the most stress were found to be the least satisfied with their work and had the highest turnover rates. As the researchers expected, registered nurses had the highest stress scores and turnover rates. The sociodemographic characteristics of age, marital status, race, religious commitment and nursing experience were not significantly related to stress.

Maloney (1982) examined job stress and its consequences for nurses employed within an ICU and non-ICU clinical setting. The purpose of this study was to identify which group of nurses experienced the most stress as evidenced by increased anxiety, somatic complaints, personal-family problems and job dissatisfaction. Four measurement instruments were used: the State-Trait Anxiety Inventory, the Somatic Complaints Index, the Job Satisfaction Index and the Personal-Family Problem Index. The latter instrument was developed by the researcher; content validity was assessed by a seven member panel. Sixty nurses (30 ICU and 30 non-ICU) from one Washington, DC hospital were randomly selected to participate in the study. All nurses were female, had baccalaureate nursing degrees and had one year or more work experience. The majority were military nurses.

Maloney (1982) found state and trait anxiety scores to be higher for non-ICU nurses than for ICU nurses. He also found that non-ICU nurses had significantly more somatic complaints, greater workload dissatisfaction and more personal-family problems than the ICU nurses. The findings of the study suggested that ICU nurses may have certain personality characteristics that enable them to better cope with stress.

In a later study, Maloney and Bartz (1983) compared the personalities of ICU and non-ICU nurses in terms of the three components characteristic of Kobasa's stress-tolerant or hardy personality: commitment, challenge and control. Three instruments with previously reported reliability and validity were used. The sample was comprised of 68 baccalaureate nurses (34 in each group) from one hospital and all nurses were female army officers, with at least one year work experience in the ICU or non-ICU setting.

The findings of the study revealed that ICU nurses were more alienated, more externally controlled and more challenged than non-ICU nurses. According to these researchers,

> when assessing the stress-tolerant personality components of commitment, control, and challenge, the mixed results seem to indicate some degree of stress tolerance in both groups rather than a strong verification of stress tolerance in either the intensive care nurses or non-intensive care nurses . . . (Maloney & Bartz, 1983:392).

Leatt and Schneck (1983) conducted a study to identify and categorize the major stressors for nurses from different clinical settings. These researchers also sought to determine whether differences in perception of stress were related to clinical setting, age, education, experience and length of time in the position. A 21 item questionnaire was developed to reflect role and task-related potential sources of stress for nurses. Face and content validity of the questionnaire were addressed on the basis of the literature and from interviews with nurses from different specialties. The study consisted of 1,253 registered nurses and non-professional nurses from 24 Alberta hospitals. These nurses were employed in nine different areas: medicine, surgery, intensive care, rehabilitation, chronic auxiliary, pediatrics, psychiatry, obstetrics and rural hospital units. The nurses were asked to indicate how stressful each item was perceived and how frequently the item occurred on their unit.

The major sources of stress as rank ordered by mean scores were: workload, physicians not available when needed, insufficient resources and patient's behavior. Factor analysis yielded four categories of stress:

role conflict, task difficulty, relief work and workload and, as expected, the researchers found that the type and intensity of stress varied across different units. ICU nurses ranked highest in stress associated with role conflict and task difficulty whereas pediatric nurses ranked relief work highest and workload stress was ranked highest by chronic auxiliary nurses. Psychiatric nurses consistently ranked low on the four categories of stress.

Although registered nurses perceived greater stress from role conflict and task difficulty than non-professional nurses, educational background was not related to relief work or workload stress. Younger and less experienced nurses perceived greater stress from role conflict and task difficulty; however, length of time in the position was unrelated to stress.

In a more recent study, Kelly and Cross (1985) examined stress and coping behaviors of intensive care and medical-surgical ward nurses. These researchers surveyed 102 nurses from two Australian hospitals and found that the medical-surgical nurses were more stressed than the ICU nurses. Medical-surgical nurses perceived greater stress associated with the environmental variables of noise, general physical environment and work space itself. Inadequate staffing was also perceived to be more stressful for medical-surgical nurses. The researchers reported that most coping behaviors were adaptive but crying, sleeping less and eating were coping strategies used more often by medical-surgical nurses than by ICU nurses.

Summary

The major tenets of the stress concept, occupational stress and stress in nursing were presented in this chapter. It was noted that stress has been defined differently by different people and this, in turn, has resulted in confusion about the conceptualization and measurement of stress. Three conceptual definitions of stress were discussed--namely the response, stimulus and transactional definitions--and were found to differ in their approach to the study of stress. The Kyriacou and Sutcliffe (1978) transactional model of teacher stress was selected as the theoretical framework for the study. The strength of the model, in this researcher's view, was that it explains the interrelationships among the various components of the stress process.

Five categories of potential occupational stressors were delineated. These included: job demands, the individual's role in the organization, interpersonal relationships at work, the organizational structure and climate, and working conditions. The effects of occupational stress on the well-being of the individual and on the organization were briefly discussed. Because occupational stress allegedly reduces job satisfaction, particular emphasis was placed on describing this relationship and on reviewing two job satisfaction theories.

The literature related to stress in nursing was reviewed. Many stressors in nursing are work-related; for example, the nature of the nurse's tasks, inadequate staffing and patient suffering or death. Other stressors, however, were found to be internal to the nurse; for example the need to be perfect. Although early research suggested that critical care nursing is highly stressful, the more recent comparative studies do not consistently support this view.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methodology of the study. The research approach, the development and pilot test of the instrument, including validity and reliability, are presented first followed by a description of the instrument itself. Also discussed in the order listed are: the selection of the setting and subjects, permission to conduct the study, the sample, and the procedures for data collection and data analysis.

The Research Approach

Sweeney and Olivieri (1981:102) described the research approach as ". . . a very generalized plan that is used as a guideline for finding answers to the problem or to the question that was initially posed." This study followed a descriptive exploratory approach simply because the focus of the study was to identify the sources and magnitude of occupational stress for critical care and medical-surgical nurses and to explore the relationship between perceptions of stress and selected variables including overall job satisfaction. Because stress is generally recognized as a complex, multidimensional concept, correlational analysis, to examine the degree of relationship between two variables, was deemed more appropriate than attempting to determine causal explanation. Comparisons were made to determine whether there were significant differences in the perceptions of stress and overall job satisfaction held by the nurses employed within the different work environments. The survey research methodology was selected for the study as this approach strives ". . . to determine the incidence, distribution, and interrelations among sociological and psychological variables" (Kerlinger, 1973:411). A questionnaire was the instrument of choice for data collection.

A survey of nurses by means of a questionnaire was appealing for several reasons. First, questionnaires are generally less expensive and time consuming to administer than other data collection methods. Second, questionnaires ". . . offer the possibility of complete anonymity" (Polit & Hungler, 1978:351). Assurances of anonymity may result in more accurate responses and may also increase the response rate. Third, questionnaires can be self-administered which virtually eliminates the possibility of researcher-respondent bias (Polit & Hungler, 1978:352). Lastly, as Sweeney and Olivieri (1981:175) stated, "questionnaires are most often used to get information on topics for which there are no 'right or wrong' answers. They provide a relatively easy way of collecting information that can be used to describe individuals." Two disadvantages of using questionnaires; namely, the response rate tends to be low (Kerlinger, 1973:414; Polit & Hungler, 1978:355) and the potential for reader misinterpretation of items (Polit & Hungler, 1978:352) were considered in the design of the questionnaire.

Development of the Questionnaire

Five questionnaires which identified sources of occupational stress for nurses within an Alberta context were located and assessed in terms of their adaptability for the purpose of this study (Arcand, 1980; Moir, 1984; Pinnell, 1979; Sands, 1985; Wry, 1985). With the exception of the

Pinnell (1979) and Moir (1984) studies, the questionnaires were designed to measure stress of nurses employed within single clinical specialty areas such as oncology (Arcand, 1980), nursing education (Sands, 1985) and the operating room (Wry, 1985). As such, they included several work-related items which were not deemed to be sources of stress for the nurses selected for this study. Pinnell's (1979) questionnaire elicited perceptions of stress among registered and non-registered nursing staff from nine different specialty areas: medicine, surgery, intensive care, rehabilitation, auxiliary, pediatrics, psychiatry, obstetrics, and rural hospital nursing units. Although Pinnell's (1979) questionnaire was an invaluable resource, greater item specificity was attempted for this study. Moir's (1984) questionnaire was designed to measure hospital and public health nurses' perceptions of stress arising from the work, home and social environments and their response to stress. Given the scope of the present study, Moir's (1984) questionnaire was used primarily as a reference source.

Of concern to the design of the instrument was the overall presentation which included such matters as clarity and the ease with which respondents could complete the questionnaire. According to Sweeney and Olivieri (1981:226), "the instrument should be as simple and uncomplicated as possible." A format, in the opinion of this researcher, which addresses these concerns has been used extensively in studies of stress in nursing and education (Jankovic, 1983; Ratsoy & Friesen, 1985; Sands, 1985; Williams, 1981; Wry, 1985) and therefore was adopted as the questionnaire format for the present research.

The questionnaire was divided into three parts to obtain: 1. biographical data, 2. perceptions about work-related stress and 3. general perceptions of work-related stress and job satisfaction. Open and closed-ended questions were used to obtain biographical information. The items generated for the questionnaire were based on a selected review of the literature and from the researcher's own experience of working in intensive care and medical-surgical clinical areas. Particular studies, however, were invaluable to the selection of questionnaire items (Anderson & Basteyns, 1981; Bailey et al., 1980; Gray-Toft & Anderson, 1981; Huckabay & Jagla, 1979; Kelly & Cross, 1985; Pinnell, 1979; Sands, 1985). Respondents were requested to rate their responses to the items on Likert-type scales. One open-ended question was included to obtain information about non-listed work-related situations perceived to be stressful. General perceptions of work-related stress and job satisfaction were investigated by means of two closed-ended questions.

In June 1986, the first draft of the questionnaire was distributed for review by seven individuals with diverse teaching and administrative experience in the fields of nursing and education. These individuals included three faculty members of the Department of Educational Administration, three hospital nursing administrators and a staff member of the Alberta Association of Registered Nurses. Reviewers were asked to evaluate the clarity of the instructions, questions and items, to comment on the appropriateness of the items, questions and format, and to identify items that should be included in the questionnaire. They were also asked to estimate the time needed to complete the questionnaire. From the feedback received from all seven reviewers, it was clear that a number of revisions were needed. Specifically, the title of the study was removed from the cover page of the questionnaire as this was viewed as a source of bias by two reviewers. Three questions within the biographical section were rewritten with instructions provided as to how to answer the questions. Response options for a number of biographical questions were clarified. A definition of stress was added, as suggested, to provide respondents with a frame of reference as to the meaning of stress; and, instructions for rating the items were made more explicit. One reviewer was not certain whether the response options of rarely, occasionally, and frequently for the frequency of occurrence dimension were adequately defined; that is, would these response options be interpreted consistently? After considerable deliberation, it was decided that for the purpose of this study, the frequency of occurrence scale was to reflect the respondents' perceptions of how often the situation occurred regardless of the number of times the situation occurred in reality. The response options served to guide respondents along a range of possible responses for this dimension. Similar frequency scales have been used successfully in other studies of occupational stress (Arcand, 1980; Ratsoy & Friesen, 1985; Wry, 1985). Several items were changed grammatically to secure greater precision in meaning. As a result, a number of items were changed, omitted or added and the sequencing of items was altered. The number of items originally identified was 62; with revisions, 65. Instructions were added to the last section of the questionnaire pertaining to general perceptions of work-related stress and job satisfaction. Three reviewers estimated 20 minutes for the completion of the questionnaire.

Pilot Testing the Questionnaire

To avoid reducing the size of the study sample, 15 nurses from similar units of a hospital other than the one selected for the study were asked to participate in the pilot test of the questionnaire; five critical care nurses, five nurses from general medical units and five nurses from general surgical units. These nurses were asked to complete the questionnaire and to evaluate the instructions, questions, items and format in terms of clarity, appropriateness and completeness. The nurses were also requested to estimate the time needed to complete the questionnaire. Appendix A contains a copy of the cover letter sent to pilot test participants.

Fourteen of the 15 nurses (93%) completed the questionnaire. The results of the pilot test indicated that only minor revisions were needed. Some items were rewritten to enhance clarity. The time needed to complete the questionnaire varied from ten minutes to 45 minutes with an average of approximately 22 minutes which was considered a reasonable time frame for this task.

Validity and Reliability

Validity refers to ". . . the degree to which a test measures what it purports to measure" (Borg & Gall, 1983:275). The critique of the questionnaire by the seven selected individuals and the pilot test of the questionnaire conducted within a hospital setting similar to that chosen for the study helped to establish face and content validity. In other words, the suggestions to improve the questionnaire led to the development of a more refined tool; one that appeared to measure what it was intended to measure and one that appeared to include a representative sample of questions relevant to occupational stress for nurses within a hospital setting.

Reliability refers to ". . . the level of internal consistency or stability of the measuring device over time" (Borg & Gall, 1983:281). The high degree to which reviewers and pilot test participants agreed in their interpretation of the items listed on the questionnaire suggested evidence of reliability. Polit and Hungler (1978:428) also noted that "an instrument may be said to be ***internally consistent*** or ***homogeneous*** to the extent that all of its subparts are measuring the same characteristic." According to these authors, a well-established method for assessing the internal consistency of an instrument is the split-half technique (1978:429). With an odd-even split, the questionnaire items were divided into two halves and reliability coefficients were obtained for each half of the test. The Guttman Split-Half coefficient was 0.91 for the items pertaining to the frequency of occurrence scale and 0.97 for the items related to the intensity of stress scale. These findings suggest that the questionnaire appears to provide reasonable stability for measuring the nurses' perceptions of work-related stress.

Description of the Questionnaire

There are three parts to the questionnaire. Part A asks for personal, professional, and organizational data. The personal variables include: age, sex, marital status and number of children. The professional variables include: educational background, employment status, years in present clinical specialty within the hospital where the respondent is currently employed, total years in present clinical specialty regardless of place of employment, and years of total nursing experience. The organizational variables include the nursing unit specialty and shift assignment. Each of these variables was examined to determine possible relationships with the nurses' perceptions of stress.

Part B consists of 65 items, the work-related situations which may be perceived as sources of stress, with two Likert-type scales alongside the list of items. Respondents were instructed to rate each item on both scales to indicate how often the situation occurred and how stressful the situation was for them. The response alternatives for each scale are mutually exclusive; that is, ". . . only **one** response from the set of responses can be selected as the answer" (Sweeney & Olivieri, 1981:206). The response options for each scale are as follows:

how often does this
situation occur for you?

1. never
2. rarely
3. occasionally
4. frequently
5. almost constantly

how stressful is this
situation for you?

0 not applicable
1 not stressful
2 mildly stressful
3 moderately stressful
4 very stressful
5 extremely stressful

One open-ended question asked respondents to identify other work situations they consider stressful and to rate these as they did for the situations previously described. The intent of the question was to provide respondents with an opportunity to describe, in their own words, any stressful situations not alluded to in the list of work-related situations.

Part C, the last part of the questionnaire, consisted of two questions pertaining to general perceptions of work-related stress and job satisfaction. The first question was designed to measure the respondents' overall level of work-related stress. The response alternatives included: 1. not stressful, 2. mildly stressful, 3. moderately stressful, 4. very stressful, 5. extremely stressful. The relationship between overall work-related stress and selected variables was explored. The last question focused on the respondents' overall level of job satisfaction. For this question, the following response scale was provided: 1. not satisfied, 2. slightly satisfied, 3. satisfied, 4. very satisfied, 5. extremely satisfied. The relationship between general perceptions of job satisfaction and selected variables was explored as well as the relationship between overall work-related stress and job satisfaction.

Questionnaires were color coded (one color per specialty) for immediate identification of returns. A copy of the questionnaire is provided in Appendix B.

Selecting the Setting and Subjects

This study was conducted in one tertiary care hospital in Alberta. The decision to select one tertiary care hospital was made after considering the geographical location of other similar hospitals in the province and the limited resources of the researcher. Although generalizations of the findings may be limited, it was felt that a study of occupational stress within and across different nursing units of one hospital would contribute to the limited available information about the nature of stress for nurses from different clinical specialties.

Subjects were purposively selected according to three criteria. First, all participating nurses had to be RN staff nurses. Second, it was necessary that each nurse had at minimum six months work experience in the clinical specialty in which s(he) was presently employed. This criterion was established to ensure that the nurses had a period of time to form clear opinions about work-related stress in their respective clinical areas. Third, all participating nurses had to be employed within an adult critical care or medical-surgical unit. This criterion was established because previous research suggests that neonatal and pediatric critical care nurses identify different sources of stress than do adult critical care nurses.

As noted earlier, one tertiary care hospital was chosen to be the data collection site. The primary reason for selecting this particular hospital was the potential for obtaining a sample of no less than 100 nurses. To validate this belief, the researcher met with the Assistant Director of Nursing--Critical Care to obtain an estimate of the number of critical care nurses who might be able to participate in the study and with the Director of Nursing--Education and Research to obtain similar information relative to medical-surgical nurses. Both meetings occurred in June 1986 prior to seeking hospital approval for the study.

Nurses employed in four adult critical care units were identified as potential subjects for the study. The four critical care units included: cardiovascular surgical intensive care, coronary care, general systems intensive care and neurosurgical intensive care units. The number of nurses from these critical care areas who met the selection criteria was estimated to be 75.

Nurses working on nursing units designated by the hospital as adult general medicine, general surgery or combined medical-surgical units were also to be included in the study. The Director of Nursing--Education and Research suggested six specific medical units and five specific surgical units from which the sample of medical-surgical nurses could be drawn. It was noted that these particular medical-surgical units had the most staff with at least six months work experience in their respective clinical areas. It was anticipated that the five identified surgical units and five of the six designated medical units would provide a representative sample of medical-surgical nurses. Approximately 100 medical-surgical nurses were thought to meet the selection criteria.

The researcher discussed the proposed study with several nurses within the hospital and received general support for the study. Letters of support were received from four Assistant Directors of Nursing.

Permission to Conduct the Study

The study proposal received approval from the Department of Educational Administration, University of Alberta in July 1986. During this same month, the researcher contacted the Vice President (Nursing) of the selected hospital to request permission for nurses to participate in the study. A copy of the research proposal was also submitted at this time. Additional copies of the proposal were submitted, as requested, for review by members of the hospital's Nursing Research Review Committee.

The Chairman of the Committee notified the researcher of the date and time of the proposal review. The meeting was held in August 1986 at which time the researcher reviewed and answered questions related to the study. A letter was received in mid August 1986 from the Vice President (Nursing) informing the researcher that the proposal had been approved for implementation (see Appendix C).

Permission to conduct a pilot test of the questionnaire was sought from a second Alberta hospital in July 1986. The researcher contacted the Project Research Coordinator to explain the nature of the study and to request permission for pilot testing the questionnaire. Two days later, the Project Research Coordinator telephoned the researcher informing her that the Director of Nursing had given approval for the pilot test. On the recommendation of the Project Research Coordinator, a letter was posted to the Director of Nursing to explain the purpose of the study and the strategy for pilot testing the questionnaire. It was agreed that the questionnaires would be delivered to the Project Research Coordinator in early July 1986. Through an efficient organizing effort on the part of the Project Research Coordinator, the questionnaires were distributed to the appropriate nurses in July 1986 and all but one were completed and returned to the researcher one week later.

The Sample

The sample consisted of 209 registered nurses employed in staff nurse positions for a minimum of six months within an adult critical care or medical-surgical nursing unit of one tertiary care hospital in Alberta. Eighty-eight (42.1%) were critical care nurses employed in one of four critical care units: cardiovascular surgical intensive care, coronary care, general systems intensive care and neurosurgical intensive care. The remaining 121 nurses were medical-surgical nurses selected from ten different medical-surgical nursing units. Of these 121 nurses, 55 (26.3%) were medical nurses and 66 (31.6%) were surgical nurses. All nurses who participated in the study were employed on either a part-time or full-time basis. Table 3.1 illustrates the number of nurses from each clinical specialty available to participate in this study.

Data Collection Procedure

Once approval of the study was obtained, the researcher met with the Nursing Unit Supervisor (NUS) or designate of the critical care and medical-surgical units selected for the study to explain the nature of the study and to request assistance in the data collection procedure. Specifically, the Nursing Unit Supervisors/designates were requested to provide the researcher with a list identifying the names of the nurses on their units who met the selection criteria. This list served as the sampling frame which ". . . is the technical name for the actual list of the sampling units or elements from which the sample will be chosen" (Polit & Hungler, 1978:459). The intent of the sampling frame was two-fold. First, it would identify the exact number of nurses from each specialty area available to participate in the study. Second, the sampling frame was to be used in the follow-up procedure. Once the study was completed, the sampling frame was destroyed.

The strategy for distributing the questionnaires to those nurses identified from the sampling frame was also discussed with each NUS/designate. It was agreed that questionnaires be delivered to the unit and then distributed by each NUS/designate. Questionnaires were

Table 3.1

Number of Nurses from Each Clinical Specialty
Available to Participate in the Study

Clinical Specialty	Number of Participants	Percentage of Sample
Medicine	55	26.3
Surgery	66	31.6
Critical care	88	42.1
Total	209	100.0

subsequently delivered by the researcher to all units selected for the study in mid August 1986.

A sealed envelope addressed to each nurse contained four items: 1. a cover letter (see Appendix D), 2. a questionnaire, 3. a stamped envelope addressed to the researcher, and 4. a stamped reply card addressed to the researcher (see Appendix E). Since the nurses were informed about the research study in the letter that accompanied the questionnaire, consent was implied with a completed and returned questionnaire. To assure anonymity, nurses were requested not to reveal their identity on the questionnaire and to mail the reply cards separately from the questionnaire. The names of the nurses who returned the reply cards were crossed off the sampling frame indicating that no follow-up was needed. A two week time period was provided for respondents to return the completed questionnaires and reply cards.

Questionnaires were color coded for each clinical specialty; pink for critical care, green for surgery and yellow for medicine. This enabled the researcher to easily identify the number of returned questionnaires by clinical specialty. In mid September 1986, follow-up with non-respondents was initiated. Nurses who had not returned the reply card received a follow-up letter (see Appendix F) enclosed in an envelope containing a questionnaire, a stamped envelope and reply card addressed to the researcher. These nurses were requested to complete and mail the questionnaires and reply cards by mid October 1986.

By the end of October 1986, 170 out of 209 questionnaires were returned for a return rate of 81.3 percent. Medical nurses had the highest response rate (85.4%) followed by surgical nurses (80.3%) and lastly critical care nurses (79.5%). Table 3.2 provides a summary of the distribution and return rate of questionnaires by specialty area.

Data Analysis

The following statistical techniques were used to analyze the data:

1. Frequency and percentage distribution of the selected personal, professional, and organizational variables.
2. Frequency and percentage distribution of overall work-related stress and job satisfaction.
3. The frequency and stress mean and rank order for each of the 65 items.
4. The Spearman rank correlation coefficient to assess the relationship between frequency of occurrence and intensity of stress.
5. Content analysis of the open-ended responses.
6. Factor analysis to examine if the questionnaire items that were perceived as stressful cluster as definite factors.
7. The t-test and one-way analysis of variance to determine differences in stress factor scores related to selected variables.
8. Multiple regression analysis to determine which stress factors account for the greatest variance in overall work-related stress.
9. The t-test and one-way analysis of variance to determine differences in overall work-related stress and job satisfaction related to selected variables.

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Table 3.2

Distribution and Return Rate of Questionnaires

Clinical Specialty	Questionnaires Distributed	Questionnaires Returned	Percentage Returned
Medicine	55	47	85.4
Surgery	66	53	80.3
Critical Care	88	70	79.5
Total	209	170	81.3

10. The Pearson product-moment correlation coefficient to examine the relationship between overall work-related stress and job satisfaction.

Summary

This descriptive exploratory study was designed to investigate the nature of work-related stress and overall job satisfaction for critical care and medical-surgical staff nurses. A survey was conducted utilizing the questionnaire developed for the study. A pilot test of the questionnaire helped to establish some degree of face and content validity. Reliability was estimated by the Guttman Split-Half procedure. The questionnaire elicited a biographical profile of respondents and their responses to questions pertaining to potential sources of stress in nursing and general perceptions of work-related stress and job satisfaction. All nurses who participated in the study were RN staff nurses with no less than six months work experience in an adult critical care or medical-surgical nursing unit of one tertiary care hospital in Alberta. Questionnaires were sent to a convenience sample of 209 nurses and the response rate was 81.3 percent. Data analysis included the following: frequency and percentage distributions, means, t-tests, one-way analysis of variance, Spearman and Pearson correlation, multiple regression analysis, factor analysis and content analysis of open-ended responses.

CHAPTER 4

DISCUSSION OF THE FINDINGS

The results of the study are presented in this chapter. The chapter is divided into two major sections as follows: 1. a demographic description of the respondents, and 2. a discussion of the data analyses related to each of the research questions presented in Chapter 1. For ease of presentation, the second section has been organized such that the research questions are restated prior to the discussion of the related findings.

Demographic Description of the Respondents

This section provides a description of the respondents in terms of personal, professional, and organizational characteristics. Data analysis included frequency and percentage distribution for selected variables.

Personal Characteristics

Table 4.1 depicts the personal characteristics of the respondents by clinical specialty. The personal characteristics included age, sex, marital status and number of children.

Age

The respondents' age ranged from 21 to 65 years with a mean age of 32.4 years (S.D. 8.33). For ease of presentation, ages were grouped into five categories. From the total sample, 54.8% were between 21 to 30 years of age; 28% were between the ages of 31 to 40; 14.3% were between 41 to 50 years of age; and 3.0% were 51 years or older. Of the nurses in the

Table 4.1

Personal Characteristics of Respondents by Clinical Specialty

Variable	Medicine		Surgery		Critical Care		Total	
	f	%	f	%	f	%	f	%
Age								
21-30	15	31.9	28	53.8	49	71.0	92	54.8
31-40	17	36.2	14	26.9	16	23.2	47	28.0
41-50	12	25.5	8	15.4	4	5.8	24	14.3
51-60	2	4.3	2	3.8	0	0.0	4	2.4
61 or older	1	2.1	0	0.0	0	0.0	1	0.6
Total	47	100.0	52	99.9	69	100.0	168	100.1
Sex								
Female	47	100.0	50	94.3	69	98.6	166	97.6
Male	0	0.0	3	5.7	1	1.4	4	2.4
Total	47	100.0	53	100.0	70	100.0	170	100.0
Marital Status								
Single	15	32.6	15	28.3	30	42.9	60	35.5
Married	28	60.9	36	67.9	38	54.3	102	60.4
Separated/Divorced	2	4.3	2	3.8	2	2.9	6	3.6
Widowed	1	2.2	0	0.0	0	0.0	1	0.6
Total	46	100.0	53	100.0	70	100.1	169	100.1
Number of Children								
None	20	42.6	23	44.2	47	67.1	90	53.3
One	6	12.8	7	13.5	6	8.6	19	11.2
Two	11	23.4	14	26.9	12	17.1	37	21.9
Three	7	14.9	4	7.7	4	5.7	15	8.9
Four or more	3	6.4	4	7.7	1	1.4	8	4.7
Total	47	100.1	52	100.0	70	99.9	169	100.0

21 to 30 ear age category, 71% were critical care nurses; 53.8% were surgical nurses and 31.9% were medical nurses. The majority of medical nurses (36.2%) were in the 31 to 40 year age category.

Sex

Traditionally, nursing has been a predominantly female profession. In this study, there were 166 female nurses (97.6%) and four male nurses (2.4%). Three (5.7%) of the male nurses were employed in surgery while only one (1.4%) male nurse was employed in critical care.

Marital Status

From the overall sample, 60.4% of the respondents were married; 35.5% were single; 3.6% were separated/divorced; and 0.6% were widowed. Most married nurses were employed in surgery (67.9%) followed by medicine (60.9%) and critical care (54.3%) respectively. The largest group of single nurses were employed in critical care (42.9%) as compared to medicine (32.6%) and surgery (28.3%).

Number of Children

Of the total sample, more than half the respondents (53.3%) indicated that they had no children. The majority of critical care nurses (67.1%) reported that they had no children whereas the majority of both medical (57.5%) and surgical (55.8%) nurses reported that they had one or more children.

Professional Characteristics

Table 4.2 illustrates the professional characteristics of the respondents by clinical specialty. The professional variables included: educational background, employment status, number of years in present clinical specialty within the hospital where the respondent is employed,

Table 4.2

Professional Characteristics of Respondents by Clinical Specialty

Variable	Medicine f	Medicine %	Surgery f	Surgery %	Critical Care f	Critical Care %	Total f	Total %
Educational Background								
RN Diploma	39	83.0	45	84.9	50	71.4	134	78.8
Post RN Certificate	3	6.4	2	3.8	7	10.0	12	7.1
Baccalaureate-Nursing	3	6.4	3	5.7	11	15.7	17	10.0
Master's Degree	0	0.0	0	0.0	0	0.0	0	0.0
Other	2	4.3	3	5.7	2	2.9	7	4.1
Total	47	100.1	53	100.1	70	100.0	170	100.0
Employment Status								
Full-time	35	74.5	33	62.3	50	71.4	118	69.4
Part-time	12	25.5	20	37.7	20	28.6	52	30.6
Total	47	100.0	53	100.0	70	100.0	170	100.0
Years in Present Clinical Specialty Within the Hospital Where the Respondent is Employed								
Less than 1 year	6	12.8	4	7.5	7	10.1	17	10.1
1 year	4	8.5	5	9.4	13	18.8	22	13.0
2 years	7	14.9	10	18.9	17	24.6	34	20.1
3-5 years	12	25.5	20	37.7	21	30.4	53	31.4
6-10 years	12	25.5	11	20.8	9	13.0	32	18.9
11 years or more	6	12.8	3	5.7	2	2.9	11	6.5
Total	47	100.0	53	100.0	69	99.8	169	100.0
Years in Present Clinical Specialty Regardless of Place of Employment								
Less than 1 year	4	8.5	3	5.7	2	2.9	9	5.3
1 year	3	6.4	3	5.7	12	17.4	18	10.7
2 years	4	8.5	7	13.2	8	11.6	19	11.2
3-5 years	16	34.0	18	34.0	28	40.6	62	36.7
6-10 years	10	21.3	14	26.4	14	20.3	38	22.5
11 years or more	10	21.3	8	15.1	5	7.2	23	13.6
Total	47	100.0	53	100.1	69	100.0	169	100.0
Total Years of Nursing Experience Regardless of Setting								
1 year	2	4.3	4	7.5	2	2.9	8	4.7
2 years	3	6.4	7	13.2	0	0.0	10	5.9
3-5 years	10	21.3	13	24.5	23	32.9	46	27.1
6-10 years	12	25.5	14	26.4	33	47.1	59	34.7
11 years or more	20	42.6	15	28.3	12	17.1	47	27.6
Total	47	100.1	53	99.9	70	100.0	170	100.0

number of years in present clinical specialty regardless of place of employment, and total years of nursing experience regardless of setting.

Educational Background

Of the overall sample 78.8% reported the RN diploma as the highest level of nursing education attained. Ten percent of the respondents held a baccalaureate degree in nursing while 7.1% obtained a post RN certificate and 4.1% completed "other" education which consisted of non-nursing university or college education. Most nurses with a baccalaureate degree in nursing were employed in critical care (15.7%) as compared to medicine (6.4%) and surgery (5.7%). None of the respondents held a Master's degree.

Employment Status

Over two thirds of the respondents in the overall sample (69.4%) reported full-time employment. The largest group of full-time nurses were employed in medicine (74.5%), followed closely by critical care (71.4%) and then surgery (62.3%). Over one third of the surgical nurses were employed part-time (37.7%).

Years in Present Clinical Specialty Within the Hospital Where the Respondent is Employed

From the overall sample, 10.1% of the respondents reported less than one year in their present clinical specialty within the hospital currently employed; 13.0% had worked one year; 20.1% had worked two years; 31.4% had worked three to five years; 18.9% had worked six to ten years; and 6.5% had worked 11 years or more. Interestingly, the majority of medical and surgical nurses reported that they held their current position for three years or more (medical 63.8%, surgical 64.2%), whereas the majority of critical care nurses indicated less than one year to two years in the current position (53.5%).

Years in Present Clinical Specialty Regardless of Place of Employment

The greatest proportion of respondents from all three clinical specialties reported three to five years experience in their present clinical specialty regardless of place of employment (critical care 40.6%; medicine 34%; surgery 34%). The largest group of respondents who had less than one year to two years experience in their clinical specialty were critical care nurses (31.9%) as compared to surgical (24.6%) and medical (23.4%) nurses. There were also fewer critical care nurses with six years or more critical care experience (27.5%) compared to the same length of experience in the medical (42.6%) and surgical (41.5%) groups. The frequency percentages for less than one year to two years, three to five years, and six years or more were nearly all identical for the medical and surgical nurses. The data suggest that after ten years, medical and surgical nurses were more likely to remain in their clinical areas than were critical care nurses.

Total Years of Nursing Experience Regardless of Setting

The respondents' nursing experience ranged from one to 33 years with a mean of 8.5 years (S.D. 5.96). Data were grouped into five categories. The majority of critical care nurses (47.1%) reported six to ten years of experience whereas the majority of medical nurses (42.6%) had 11 years or more nursing experience. The experience of surgical nurses was more evenly distributed in the three to five; six to ten; and 11 years or more categories (24.5%; 26.4%; 28.3% respectively).

Organizational Characteristics

Four organizational characteristics were examined. These included nursing unit presently employed, relocation of nursing unit June/July 1986, rotating shift, and hours usually worked.

Nursing Unit Presently Employed

Table 4.3 shows the distribution of respondents by clinical specialty. The largest group of respondents were critical care nurses (41.2%) followed by surgical nurses (31.2%) and then medical nurses (27.6%). Table 4.4 outlines the distribution of critical care nurses by critical care specialties. There was one missing case. Most critical care nurses were employed in the general intensive care unit (47.1%).

Relocation of Nursing Unit During June/July 1986

The reader is reminded that the study was conducted shortly after the time of the planned move of several nursing units to a new hospital facility. The nursing units which did not move were already occupants in the new hospital facility.

The majority of medical (95.7%) and surgical (98.1%) nurses reported that their nursing units had moved to their present location in June or July 1986. Of the critical care nurses, 79.7% indicated that their units did not relocate during this time (see Table 4.5).

Rotating Shift

Of all respondents, 84.6% reported that they worked rotating shift schedules. The largest group of respondents least likely to work rotating shift schedules were critical care nurses (17.4%), followed by medical (14.9%) and surgical (13.2%) nurses (see Table 4.5).

Table 4.3

Distribution of Respondents by Clinical Specialty

Clinical Speciality	f	%
Medicine	47	27.6
Surgery	53	31.2
Critical Care	70	41.2
Total	170	100.0

Table 4.4

Distribution of Critical Care Respondents by Critical Care Specialties

Critical Care Unit	f	%
Cardiovascular Surgical Intensive Care	15	21.4
Coronary Care	12	17.1
General Intensive Care	33	47.1
Neurosurgical Intensive Care	9	12.9
Missing Case	1	1.4
Total	70	99.9

Table 4.5

Organizational Characteristics of Respondents by Clinical Specialty

Variable	Medicine		Surgery		Critical Care		Total	
	f	%	f	%	f	%	f	%
Relocation of Nursing Unit During June or July 1986								
Yes	45	95.7	52	98.1	14	20.3	111	65.7
No	2	4.3	1	1.9	55	79.7	58	34.3
Total	47	100.0	53	100.0	69	100.0	169	100.0
Rotating Shift								
Yes	40	85.1	46	86.8	57	82.6	143	84.6
No	7	14.9	7	13.2	12	17.4	26	15.4
Total	47	100.0	53	100.0	69	100.0	169	100.0
Hours Usually Worked								
8 hour shift	8	17.0	20	37.7	11	15.7	39	22.9
12 hour shift	39	83.0	32	60.4	56	80.0	127	74.7
Other	0	0.0	1	1.9	3	4.3	4	2.4
Total	47	100.0	53	100.0	70	100.0	170	100.0

Hours Usually Worked

The majority of all respondents (74.7%) reported that they usually worked 12 hour shifts. Eight hour shifts were more commonly worked in surgery (37.7%) as compared to medicine (17.0%) and critical care (15.7%). The "other" category for hours usually worked was most common in the critical care group (4.3%) whereas only 1.9% of the surgical nurses and none of the medical nurses reported working a shift other than the eight or 12 hour shift (see Table 4.5).

In summary, the frequency and percentage frequency for selected variables were outlined to obtain a descriptive profile of the respondents. With respect to personal characteristics, the majority of the overall sample were female (97.6%), between 21 to 30 years of age (54.8%), married (60.4%), and had no children (53.3%).

Professional and organizational characteristics were also examined. Of the total sample, most nurses reported the RN diploma as the highest level of nursing education attained (78.8%), were employed full-time (69.4%), and had three to five years experience in their present position in the agency studied (31.4%). Regardless of place of employment, the greatest proportion of the sample worked in their present clinical specialty for three to five years (36.7%) and had six to ten years total nursing experience (34.7%).

The largest group of nurses were critical care nurses (41.2%), followed by surgical (31.2%) and medical (27.6%) nurses. Of the overall sample, 65.7% indicated a nursing unit relocation in June/July 1986. The majority of the sample worked rotating shifts (84.6%), and the hours usually worked were the 12 hour shift (74.7%).

As compared to medical and surgical nurses, critical care nurses were more likely to be younger, single, and have no children. They were also more likely to have a baccalaureate nursing degree and, in general, have fewer years of work experience in their clinical specialty.

Analysis of the Stress Data

The results of the statistical analysis of the stress data are discussed in terms of sources of work stress, stress factors, and general perceptions of overall work-related stress and job satisfaction.

Sources of Work Stress

This section presents the findings regarding the frequency of occurrence and the intensity of stress for the 65 items included in Part B of the questionnaire. Also included is the content analysis of responses to the one open-ended question. As such, the findings are discussed in relation to the three research questions pertaining to sources of work stress.

Frequency of Occurrence and Intensity of Stress

> *How do nurses rate the frequency of occurrence and the intensity of stress for each of the selected items?*

For each of the 65 items, respondents were asked to indicate how often the work-related situation occurred and how stressful the situation was for them. The reader is reminded that the frequency of occurrence scale consisted of five response choices: 1. never, 2. rarely, 3. occasionally, 4. frequently, and 5. almost constantly. The six response choices for the intensity of stress scale included: 0. not applicable, 1. not stressful, 2. mildly stressful, 3. moderately stressful, 4. very stressful, and 5. extremely stressful. Respondents were also instructed to regard any situation they rated as "never" on the frequency scale as "not applicable" on the stress scale. Thus, the stress mean reflects the intensity of stress associated with those work-related situations actually experienced by the respondents. Table 4.6 depicts the frequency and stress mean and rank order for each of the 65 items. All items were rank ordered according to the stress mean scores. The items rated most stressful appear first and are listed in descending order so that the least stressful items appear last. The reported means reflect the average ratings for frequency and intensity of stress.

There were two items (item 45--"working with nurses who are floated to your unit" and item 29--"being assigned to work rotating shifts") with frequency mean scores greater than 4.00 indicating that, on average, these items occurred in the frequently to almost constantly range. There were 27 items with frequency means between 3.97 and 3.10 which corresponds to the occasionally to frequently range and 35 items had frequency means of 2.97 to 2.13 which reflects the rarely to occasionally range of occurrence. The least frequent occurring item (item 55--"being asked to disregard/overlook hospital policies and/or procedures") had a frequency mean of 1.91. Most items had an average occurrence rating between rarely and occasionally.

It is interesting to note that there were no items with stress mean scores equal to or greater than 4.00. That is, on average, none of the items were rated as being in the range of very stressful to extremely

Table 4.6

Rank Order of Work-Related Situations According to Stress Mean Scores

Work-Related Situation		Frequency of Occurrence		Intensity of Stress	
		Mean	Rank	Mean	Rank
56.	Making an error in caring for a patient	2.22	62.5	3.91	1
39.	Being involved in carrying out procedures to unnecessarily prolong life	3.20	24	3.79	2
14.	Not having enough staff to adequately cover the unit	3.57	14	3.66	3
65.	Feeling that senior hospital nursing administrators are unaware of the realities of the unit	3.68	8	3.63	4
40.	Working with a nurse whom you consider deficient in nursing knowledge	2.78	37	3.55	5
63.	Working with a nurse whom you consider deficient in nursing skills	2.76	43	3.47	6
44.	Not having enough time to complete all assigned nursing responsibilities	3.13	27.5	3.29	7.5
22.	Caring for a patient whose behavior is difficult (e.g. restless, irrational, or uncooperative)	3.43	17	3.29	7.5
31.	Experiencing an interpersonal conflict with another nurse from the unit	2.22	62.5	3.28	9
10.	Not having the doctor available when needed	2.81	36	3.21	11
25.	Working with a nurse whose attitudes/behavior you consider to be unprofessional	2.71	46	3.21	11
64.	Working with doctors who seem to constantly criticize nursing practice	2.25	61	3.21	11
46.	Experiencing an inadequate level of understanding and support from senior hospital nursing administration	3.24	22	3.20	13
48.	Feeling inadequately prepared to provide safe patient care	2.26	60	3.19	14

Table 4.6 (continued)

Work-Related Situation	Frequency of Occurrence		Intensity of Stress	
	Mean	Rank	Mean	Rank
49. Not having sufficient supplies/ equipment needed for patient care (e.g. linen, medications)	3.62	12.5	3.17	15
9. Floating to another unit	2.39	57	3.15	16
41. Disagreeing with a medical staff member about the treatment of a patient	2.63	49	3.12	17
59. Finding that the previous shift's work is left unfinished	2.92	31	3.09	18
58. Experiencing a poor working relationship with a doctor	2.41	55	3.05	19.5
60. Discussing death and dying with a patient's family	2.77	40	3.05	19.5
33. Being involved in emergencies	3.35	20	3.04	21
8. Working with equipment that is not functioning properly	3.10	29	2.98	22.5
53. Working with a doctor who does not keep the family informed about the patient's condition	2.89	34	2.98	22.5
6. Caring for a critically ill patient whose prognosis is poor	3.68	8	2.96	24.5
27. Discussing death and dying with a patient	2.58	52	2.96	24.5
20. Receiving inadequate information from a doctor regarding a patient's condition	2.69	47	2.94	26
19. Receiving incompatible instructions from two or more people	2.64	48	2.93	27
61. Being the person in the middle between hospital regulations and the demands of patients and/or their families	2.77	40	2.92	28
42. Having few facilities available for staff privacy (e.g. nurses' lounge, conference rooms)	3.48	16	2.89	29
50. Feeling inadequately prepared to provide psychological support to a patient's family	2.77	40	2.86	30
57. Contending with poor communication among nursing staff of the unit	2.77	40	2.85	31

Table 4.6 (continued)

Work-Related Situation	Frequency of Occurrence Mean	Frequency of Occurrence Rank	Intensity of Stress Mean	Intensity of Stress Rank
43. Being the person in the middle between the patients and doctors	3.24	22	2.83	32
18. Dealing with the death of a patient	3.15	26	2.82	33.5
23. Not being involved in making decisions affecting your work	2.75	44.5	2.82	33.5
26. Having to hide your true feelings to maintain a professional image	2.82	35	2.78	35
2. Having limited time to provide emotional support to a patient	3.82	4	2.77	36
32. Having inadequate protection from biological, chemical or radiation hazards	2.37	59	2.75	37
55. Being asked to disregard/ overlook hospital policies and/or procedures	1.91	65	2.74	38
35. Being assigned to charge duty	3.40	18	2.70	39
5. Feeling uncertain about the legal responsibilities of your role	2.91	32.5	2.66	40.5
38. Performing necessary procedures that patients experience as painful	3.66	11	2.66	40.5
37. Making rapid decisions regarding patient care	3.67	10	2.56	42
28. Being unclear about your work responsibilities	2.13	64	2.53	43
51. Contending with too many non-nursing activities (e.g. clerical work, distributing meal trays)	3.16	25	2.48	44
21. Contending with excessive noise levels on the unit	3.13	27.5	2.45	45
45. Working with nurses who are floated to your unit	4.30	1	2.44	46
17. Receiving limited support from your unit supervisor	2.39	57	2.43	47
34. Attempting to meet the needs of a patient's family	3.49	15	2.38	48
1. Adjusting to the unpredictable workpace of the unit	3.68	8	2.37	49

Table 4.6 (continued)

Work-Related Situation	Frequency of Occurrence		Intensity of Stress	
	Mean	Rank	Mean	Rank
52. Feeling pressure to upgrade academic qualifications	2.59	51	2.32	50
16. Feeling that you have inadequate knowledge of the hospital's policies and procedures	2.77	40	2.28	51
54. Receiving limited feedback from colleagues about your work performance	2.75	44.5	2.23	52
30. Acting as a resource person for various types of health care learners (e.g. student nurses, interns, residents, newly hired personnel)	3.70	6	2.22	53
4. Performing physically strenuous work	3.74	5	2.21	54.5
62. Performing your role with limited advice from your unit supervisor	2.61	50	2.21	54.5
24. Having limited opportunities to attend inhouse educational sessions	3.39	19	2.19	56.5
29. Being assigned to work rotating shifts	4.09	2	2.19	56.5
47. Having few opportunities to share work-related experiences, thoughts, and feelings with colleagues	2.49	54	2.14	58
12. Missing scheduled coffee/meal breaks	2.97	30	2.09	59
7. Receiving limited feedback from your unit supervisor regarding your work performance	2.91	32.5	2.08	60
36. Having few opportunities to discuss unit problems with colleagues	2.52	53	2.03	61
15. Caring for elderly patients	3.97	3	1.81	62
13. Teaching a patient's family about the patient's health care needs	3.24	22	1.60	63
3. Attending staff meetings during work time	2.39	57	1.59	64
11. Being involved in patient teaching	3.62	12.5	1.47	65

stressful. Twenty-one items with stress means between 3.91 and 3.04 rated between moderately stressful and very stressful while 40 items with stress means between 2.98 and 2.03 rated between mildly stressful and moderately stressful. Only four items had stress means between 1.81 and 1.47 which indicated a rating of not stressful to mildly stressful. The majority of items however, had an average rating between mildly stressful and moderately stressful.

A comparison of the stress mean scores of respondents by clinical specialty revealed that critical care nurses had the highest stress mean scores for 47 of the 65 items whereas medical and surgical nurses each reported the highest stress mean score for eight items. Two items were found to be equally stressful for two groups of nurses (see Appendix G). These preliminary findings suggest that, on average, critical care nurses experienced greater stress relative to the 65 items than nurses from the medical or surgical clinical settings.

Correlation Between Frequency of Occurrence and Intensity of Stress

> *What is the relationship between the frequency of occurrence and the intensity of stress with the selected items?*

As shown in Table 4.6 there were noticeable differences between the frequency and intensity ratings for most items. For example, the most stressful item "making an error in caring for a patient" ranked very low (rank 62.5) in frequency. Of the ten items ranked highest in intensity, only one item (item 65--"feeling that senior hospital nursing administrators are unaware of the realities of the unit") ranked among the first ten in frequency. The Spearman rank correlation coefficient was calculated to determine empirically the strength of the relationship between frequency and intensity of stress for the 65 items. The Spearman rank correlation coefficient (r = -0.055, p = 0.333) indicated that no significant relationship existed between frequency and intensity of stress.

Content Analysis of the Open-Ended Responses

Which work situations do nurses personally identify in open-ended responses as being sources of work-related stress?

One open-ended question provided respondents with an opportunity to describe any stressful work-related situation not included in the questionnaire. Respondents were instructed to rate the frequency and intensity of stress relative to each item which they added. Inspection of the data revealed that in many instances, respondents identified one stressful situation only, and in other instances, several stressful situations were listed by individual respondents. Because it was impossible to calculate frequency and stress means for all items, a summary of responses is provided. Although several responses aligned closely with the work-related situations identified in the questionnaire, some respondents indicated situations not previously described. The responses were grouped into six categories. Table 4.7 provides an overview of the sources of stress identified by the respondents. Sixty-five (38%) nurses provided a total of 128 additional work-related situations.

Management of the Unit

There were six areas of concern related to the management of the unit. Staffing concerns, including floating to other units and bed utilization, were discussed by 13 nurses. Five nurses indicated that assuming charge nurse responsibilities is very stressful, particularly when staff on the unit are all float staff, when there is uncertainty with respect to charge nurse responsibilities, and upon returning to work from holidays or after five days off. Workload distribution concerns were discussed by nine nurses in terms of inequitable patient assignments among staff on the unit, colleagues not being available to help with patient care, and break coverage. Total patient care, a method of nursing care delivery, was a source of stress for four nurses. Concerns with resource utilization were discussed by five nurses in terms of wastage of supplies, not having updated manuals on the unit, the amount of time the Nursing Unit Supervisor is off the unit, and performing non-nursing tasks. Administrative practices of concern to six nurses included: not being able to schedule holidays without six months notice, inconsistent application of policies and procedures, consistently getting off work late, not being informed of hour changes in the work schedule, and having to implement new nursing policies without input from nursing staff.

Unsatisfactory Work Relationships

Comments on nurse-medical staff problems from nine respondents dealt with difficulties contacting medical staff, difficulties interpreting doctor's orders, working with inexperienced residents and communication difficulties, including language difficulties, with medical staff. Unsatisfactory interdepartmental relationships cited by ten respondents were attributed to difficulties contacting interdepartmental personnel, support staff not available when needed, working with non-nursing staff unfamiliar with the unit, and communication problems due to a language barrier. Stress related to strained relationships with nursing colleagues was commented on by 14 nurses. Conflicts with colleagues were attributed to working with incompetent staff, lack of teamwork, working with float nurses, inexperienced nurses, burnt out nurses, and being a preceptor for

Table 4.7

Sources of Stress Personally Identified by Respondents

Category of Stressor	Stressor
Management of the Unit	- Inadequate Staffing - Charge Nurse Responsibilities - Workload Distribution - Total Patient Care - Utilization of Resources - Administrative Practices
Unsatisfactory Work Relationships	- Medical Staff (attending physicians, residents, interns) - Interdepartmental - Nurses - Unit-Based Instructor - Nursing Students - Patient Families
Patient Contact	- Types of Patients - Nature of Procedures Performed - Lack of Patient Privacy
Workload	- Patient Care Audits - Time Constraints - Repetitive Work
Working Conditions	- Inadequate Parking Facilities - No Nurses' Lounge - Cafeteria Service - Mock Codes/Fire Drills - Working Alone During Breaks - Shift Schedules - Inadequate Storage Space - Media Attention Focused on Hospital
Overinvolvement with Work	- Emotional Exhaustion

experienced nursing staff. Respondents also commented on the lack of support/recognition received from peers and administrators for working extra shifts, exerting extra effort and for having little sick time. One respondent indicated that the unavailability of the Unit-Based Instructor was moderately stressful and another respondent indicated that evaluating students was stressful particularly when students are on the unit for a short period of time. Concerns about rapport with patients' families were discussed by two respondents.

Patient Contact

The majority of comments within this category dealt with the stress nurses experience in caring for particular types of patients. Specific stressful situations included: caring for critically ill children, infants and elderly patients, caring for "off-service" patients, long term care patients, abusive patients, and patients unwilling to accept treatment. Respondents also commented on stress related to the nature of patient care procedures performed. Initiating emergency procedures, transferring patients for tests and being involved in aggressive treatment for dying patients were specific situations discussed by six nurses. One respondent identified lack of patient privacy as being stressful.

Workload

One respondent identified patient care audits as a source of stress. Three respondents discussed concerns with lack of time to attend inservice sessions and to learn about new equipment. Repetitive work was stressful for two respondents.

Working Conditions

There were eight areas of concern related to working conditions. Five respondents commented on the lack of parking facilities for nursing staff. Concerns with not having a nurses' lounge were also discussed by five respondents. Two respondents commented on the cafeteria service in terms of the quality of food served and the long line-ups encountered. One respondent indicated that mock codes and fire drills were stressful while another respondent cited working alone during break periods as stressful. Concerns with shift schedules including working 12 hour shifts, the number of consecutive shifts scheduled and working statutory holidays were discussed by three respondents. Other items considered stressful by two respondents included inadequate storage space on the unit and media attention focused on the hospital.

Overinvolvement with Work

Two respondents discussed problems related to being overinvolved with work. These nurses reported not having enough emotional energy at the end of the shift to participate in non-work activities.

Over one-third of the total sample responded to the open-ended question. The responses were categorized according to the content of each comment. It is noteworthy that many of the stressors identified by the respondents correspond to stressors frequently reported in the literature on stress in nursing. The respondents, however, provided more vivid descriptions of stressors than what is generally reported in the literature.

Stress Factors

The findings related to the three research questions dealing with stress factors are presented below. Specifically, this section contains the results of the factor analysis performed on the stress items, a discussion of the extent to which stress factors were influenced by selected personal, professional, and organizational characteristics, and the results of the multiple regression analysis performed to determine the best predictors of overall stress.

Factor Analysis

> *Do the items perceived as contributing to the nurses' stress at work represent distinct stress factors?*

Factor analysis with Varimax rotation was done using the Likert stress scale responses to the 65 questionnaire items. Inspection of the data revealed that only 31 cases had non-missing data on all variables. Further examination indicated that variables scored "not applicable" on the stress scale and non-responses accounted for the missing cases. The data were subsequently reviewed to identify those variables from the stress scale with missing cases equal to or greater than ten percent of the sample (n = 170). Fourteen items were found to have 17 or more missing cases. Factor analysis was repeated, first with the elimination of the five items with the highest number of missing cases and then with the elimination of the 14 items with 17 or more missing cases. With the five items eliminated, the number of cases with non-missing data on all variables was 44 and with the 14 items eliminated, the number of cases was 71. A decision was made to repeat the factor analysis with the proviso that, if on the frequency scale, the item had been rated "never", it would now be considered "not stressful" rather than "not applicable" on the stress scale. That is, if the item did not occur, it was interpreted as not stressful. With this proviso, the number of cases which had non-missing data was 100. Thus, the factor analysis performed on the 100 cases with non-missing data on all variables was utilized in the study.

Items included in the interpretation of the factors were selected according to the following criteria:

1. The loading of the item was greater than or equal to 0.40.
2. The item must load decisively on one factor only. Thus, items which loaded at 0.40 or greater or more than one factor were not included in the factor interpretation.
3. The item must contribute logically to the meaning of the factor.

Factor solutions four to ten were analyzed and the five factor solution was found to be the most appropriate. The five factors accounted for 48.5 percent of the total variance (see Table 4.8).

As shown in Table 4.9, there were four items which did not load at 0.40 or higher; these items were deleted. There were also seven items which loaded greater than 0.40 on more than one factor (see Table 4.10). These seven items were deleted as well.

Description of the Factors

Factor 1: Unsatisfactory Relationships at Work - This factor consists of 21 items related to the unsatisfactory nature of relationships at work. The factor loadings for these items range from 0.72 to 0.43 and are shown in Table 4.11. This factor included several dimensions of difficult interpersonal relationships that nurses experienced within their work environment. Items 40, 63, and 25 suggest concern with peer professional competency whereas items 50, 56, and 52 suggest concern with

Table 4.8

Eigenvalues and Variances for the Five Factor Solution

Factor	Eigenvalue	% Variance	Cumulative %
Factor 1	20.41	31.4	31.4
Factor 2	3.75	5.8	37.2
Factor 3	2.83	4.4	41.5
Factor 4	2.38	3.7	45.2
Factor 5	2.14	3.3	48.5

Table 4.9

Items Which Loaded Below 0.40 on the Factors

	Factor Loadings				
Item	F1	F2	F3	F4	F5
10. Not having the doctor available when needed	0.32	0.33	0.34	0.08	0.29
21. Contending with excessive noise levels on the unit	0.39	0.05	0.21	0.22	0.38
30. Acting as a resource person for various types of health care learners (e.g. student nurses, interns, residents, newly hired personnel)	0.22	0.37	0.39	0.20	0.19
45. Working with nurses who are floated to your unit	0.20	0.35	0.22	0.32	0.12

Table 4.10

Items Which Loaded At Or Greater Than 0.40
on More Than One Factor

	Factor Loadings				
Item	F1	F2	F3	F4	F5
18. Dealing with the death of a patient	$\boxed{0.44}$	0.04	$\boxed{0.62}$	0.17	0.04
19. Receiving incompatible instructions from two or more people	$\boxed{0.49}$	$\boxed{0.56}$	0.05	0.08	0.28
26. Having to hide your true feelings to maintain a professional image	$\boxed{0.47}$	0.20	$\boxed{0.40}$	0.33	-0.02
48. Feeling inadequately prepared to provide safe patient care	$\boxed{0.43}$	$\boxed{0.50}$	0.16	-0.19	0.18
54. Receiving limited feedback from colleagues about your work performance	$\boxed{0.47}$	$\boxed{0.52}$	0.16	0.06	-0.27
57. Contending with poor communication among nursing staff of the unit	$\boxed{0.47}$	$\boxed{0.59}$	0.04	0.11	0.04
60. Discussing death and dying with a patient's family	$\boxed{0.52}$	0.15	$\boxed{0.58}$	0.08	-0.01

Table 4.11

Factor Items and Loadings for Factor 1: Unsatisfactory Relationships at Work

Item	Factor Loadings				
	F1	F2	F3	F4	F5
40. Working with a nurse whom you consider deficient in nursing knowledge	0.72	0.12	0.21	0.15	0.12
63. Working with a nurse whom you consider deficient in nursing skills	0.71	0.21	0.18	0.11	0.24
50. Feeling inadequately prepared to provide psychological support to a patient's family	0.69	0.13	0.31	-0.07	-0.02
61. Being the person in the middle between hospital regulations and the demands of patients and/or their families	0.68	0.24	0.19	0.22	-0.03
25. Working with a nurse whose attitudes/behavior you consider to be unprofessional	0.67	0.23	0.07	0.17	0.20
41. Disagreeing with a medical staff staff member about the treatment of a patient	0.63	0.26	0.13	0.03	-0.00
53. Working with a doctor who does not keep the family informed about the patient's condition	0.62	0.29	0.17	0.20	0.15
58. Experiencing a poor working relationship with a doctor	0.57	0.37	0.09	-0.11	0.24
31. Experiencing an interpersonal conflict with another nurse from the unit	0.55	0.26	0.39	0.13	-0.01
64. Working with doctors who seem to constantly criticize nursing practice	0.55	0.32	0.04	0.07	0.05

Table 4.11 (continued)

Item	Factor Loadings				
	F1	F2	F3	F4	F5
56. Making an error in caring for a patient	0.51	0.19	0.02	-0.34	0.34
20. Receiving inadequate information from a doctor regarding a patient's condition	0.50	0.35	0.08	0.13	0.25
39. Being involved in carrying out procedures to unnecessarily prolong life	0.49	0.05	0.31	0.14	0.27
65. Feeling that senior hospital nursing administrators are unaware of the realities of the unit	0.49	0.11	0.22	0.24	0.21
49. Not having sufficient supplies/ equipment needed for patient care (e.g. linen, medications)	0.48	0.25	-0.09	0.13	0.25
44. Not having enough time to complete all assigned nursing responsibilities	0.48	0.30	0.27	0.30	0.24
52. Feeling pressure to upgrade academic qualifications	0.47	0.09	0.04	0.27	-0.16
46. Experiencing an inadequate level of understanding and support from senior hospital nursing administration	0.46	0.36	0.08	0.13	0.25
32. Having inadequate protection from biological, chemical or radiation hazards	0.46	0.17	0.11	-0.10	0.30
43. Being the person in the middle between the patients and doctors	0.44	0.29	0.39	0.24	-0.05
59. Finding that the previous shift's work is left unfinished	0.43	0.09	0.24	0.23	0.31

one's own professional competency. Another dimension relates to conflicts among nursing staff (items 31, 44, and 59), conflicts between nurses and medical staff (items 41, 53, 58, 64, and 20), and professional-bureaucratic conflict (items 61, 39, and 43). Items 65 and 46 deal with communication problems with senior nursing administrators. Lastly, items 49 and 32 suggest lack of interdepartmental support within the health care facility.

Factor 2: Lack of Support for Professional Growth - Factor 2 consists of 11 items that focus on the lack of support for professional growth. Items loadings range from 0.67 and 0.44 (see Table 4.12). Three items focus on the limited degree of support given by the Nursing Unit Supervisor. Item 55 suggests minimal support for compliance with established hospital policies and procedures. Three items deal with a lack of structure to facilitate collegial sharing. Items 16, 28, 5, and 23 reflect insecurity and uncertainty with respect to how nurses should function as professionals. It may be that nurses truly do not have clear expectations of what is required of their role or, alternatively, nurses may have certain beliefs about what constitutes nursing practice which are in conflict with the established norms of the hospital.

Factor 3: Patient Care Responsibilities - The 13 items which load on this factor relate to various facets of patient care. As shown in Table 4.13, the loading values of the items are quite high. Most items describe the nurse's direct interaction with a patient or patient's family and the essence of nursing tasks performed. Items 35 and 1 describe work-related situations in which nurses are accountable for a group of patients on the unit. Initially, item 1 did not appear to fit with all

Table 4.12

Factor Items and Loadings for Factor 2:
Lack of Support for Professional Growth

	Factor Loadings				
Item	F1	F2	F3	F4	F5
7. Receiving limited feedback from your unit supervisor regarding your work performance	0.18	0.67	0.02	0.15	-0.08
16. Feeling that you have inadequate knowledge of the hospital's policies and procedures	-0.00	0.63	0.24	0.04	0.32
17. Receiving limited support from your unit supervisor	0.24	0.63	0.15	0.10	0.17
47. Having few opportunities to share work-related experiences, thoughts, and feelings with colleagues	0.23	0.62	0.23	0.37	0.09
62. Performing your role with limited advice from your unit supervisor	0.34	0.58	0.16	0.07	-0.26
36. Having few opportunities to discuss unit problems with colleagues	0.14	0.58	0.25	0.33	0.10
55. Being asked to disregard/ overlook hospital policies and/or procedures	0.25	0.55	0.08	-0.05	0.11
28. Being unclear about your work responsibilities	0.31	0.50	0.29	-0.02	0.15
5. Feeling uncertain about the legal responsibilities of your role	0.20	0.50	0.22	0.17	0.29
23. Not being involved in making decisions affecting your work	0.37	0.49	0.01	0.20	0.28
24. Having limited opportunities to attend inhouse educational sessions	0.11	0.44	0.11	0.22	0.35

Table 4.13

Factor Items and Loadings for Factor 3:
Patient Care Responsibilities

	Factor Loadings				
Item	F1	F2	F3	F4	F5
11. Being involved in patient teaching	-0.01	0.15	0.72	0.01	-0.01
33. Being involved in emergencies	0.08	0.05	0.67	0.04	0.14
6. Caring for a critically ill patient whose prognosis is poor	0.25	0.18	0.61	0.38	0.02
37. Making rapid decisions regarding patient care	0.25	0.21	0.59	0.06	0.08
27. Discussing death and dying with a patient	0.29	-0.12	0.59	-0.19	-0.17
35. Being assigned to charge duty	-0.02	0.23	0.56	0.20	0.16
13. Teaching a patient's family about the patient's health care needs	0.23	0.07	0.54	-0.04	-0.04
1. Adjusting to the unpredictable workpace of the unit	-0.02	0.11	0.52	0.08	0.26
22. Caring for a patient whose behavior is difficult (e.g. restless, irrational, or uncooperative)	0.33	0.20	0.52	0.18	0.31
15. Caring for elderly patients	-0.02	0.22	0.51	0.08	0.23
38. Performing necessary procedures that patients experience as painful	0.38	0.08	0.47	0.12	0.10
34. Attempting to meet the needs of a patient's family	0.37	0.15	0.44	0.20	0.13
4. Performing physically strenuous work	0.02	-0.08	0.44	0.39	0.01

the other patient care items but with further deliberation "adjusting to the unpredictable workpace of the unit" was considered appropriate as it reflects a variable workload which, in turn, may have a cogent impact on patient care.

Factor 4: Role Strain - This factor consists of five items related to role strain. Each item focuses on a situation which cause nurses some difficulty in performing their role. The items and their loading values are shown in Table 4.14.

Factor 5: Management of the Unit - Factor 5 includes four items related to the management of the unit in terms of adequacy of human and technical resources. Item loading range from 0.67 to 0.42 (see Table 4.15). Three of the four items deal directly with concerns about staffing.

In summary, factor analysis was performed on stress responses to 65 items. The five factor solution accounted for 48.5 percent of the total variance. The five factors identified were: unsatisfactory relationships at work, lack of support for professional growth, patient care responsibilities, role strain, and management of the unit.

Table 4.14

Factor Items and Loadings for Factor 4: Role Strain

	Factor Loadings				
Item	F1	F2	F3	F4	F5
3. Attending staff meetings during work time	0.03	0.20	0.01	0.64	0.10
42. Having few facilities available for staff privacy (e.g. nurses' lounge, conference rooms)	0.05	0.16	0.06	0.61	-0.00
2. Having limited time to provide emotional support to a patient	0.21	-0.12	0.09	0.58	0.26
29. Being assigned to work rotating shifts	0.14	0.16	0.20	0.51	-0.00
51. Contending with too many non-nursing activities (e.g. clerical work, distributing meal trays)	0.24	0.18	-0.01	0.48	0.33

Table 4.15

Factor Items and Loadings for Factor 5: Management of the Unit

	Factor Loadings				
Item	F1	F2	F3	F4	F5
8. Working with equipment that is not functioning properly	0.36	0.19	0.06	0.12	0.67
14. Not having enough staff to adequately cover the unit	0.26	0.14	0.24	0.27	0.61
9. Floating to another unit	-0.09	0.22	0.39	-0.19	0.44
12. Missing scheduled coffee/ meal breaks	0.23	0.19	0.29	0.31	0.42

Analyses of the Impact of Selected Characteristics on Perceptions of Stress

To what extent are the stress factors associated with selected personal, professional, and organizational variables?

The t-test and one-way analysis of variance procedures were performed to determine whether the nurses' perceptions of stress, as measured by the five stress factors, were related to selected personal, professional, and organizational characteristics. Gender, however, was omitted from the analyses because of the small proportion of male respondents (2.4%) relative to female respondents (97.6%).

Personal Characteristics

Age - With a one-way analysis of variance, three age categories were compared; 21 - 30 years, 31 - 40 years and 41 years or older. As shown in Table 4.16 there were no significant differences among the groups on any of the five stress factors.

Marital Status - The categories of separated/divorced and widowed were excluded from analysis because of the small proportions in each of these groups (separated/divorced 3.6%, widowed 0.6%). The results of the t-test performed to compare stress factor mean scores for single and married nurses are presented in Table 4.17. There were no significant differences between single nurses and married nurses on any of the five stress factors.

Presence of Children - The t-test revealed no significant differences between nurses with children and nurses with no children on any of the five stress factors. The findings are reported in Table 4.18.

Table 4.16

One-way Analysis of Variance of Stress Factor Mean Scores According to Age

Stress Factor	Age Group 1 21-30 years (n = 92) Mean	 Group 2 31-40 years (n = 47) Mean	 Group 3 41 years or older (n = 29) Mean	F-ratio	Significance
1. Unsatisfactory Relationships at Work	3.14	2.99	2.91	1.43	NS
2. Lack of Support for Professional Growth	2.27	2.16	2.13	0.72	NS
3. Patient Care Responsibilities	2.50	2.38	2.26	2.03	NS
4. Role Strain	2.31	2.31	2.34	0.03	NS
5. Management of the Unit	2.95	2.83	2.93	0.32	NS

NS Not significant

Table 4.17

T-test Comparisons of Stress Factor Mean Scores According to Marital Status

	Marital Status			
Stress Factor	Group 1 Single (n = 60) Mean	Group 2 Married (n = 102) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.09	3.03	0.47	NS
2. Lack of Support for Professional Growth	2.18	2.22	-0.34	NS
3. Patient Care Responsibilities	2.44	2.43	0.17	NS
4. Role Strain	2.31	2.30	0.09	NS
5. Management of the Unit	2.87	2.95	-0.65	NS

NS Not significant

Table 4.18

T-test Comparisons of Stress Factor Mean Scores According to Presence of Children

Stress Factor	Presence of Children: Group 1 Have children (n = 79) Mean	Presence of Children: Group 2 Do not have children (n = 90) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	2.97	3.15	1.58	NS
2. Lack of Support for Professional Growth	2.20	2.23	0.26	NS
3. Patient Care Responsibilities	2.39	2.46	0.77	NS
4. Role Strain	2.29	2.33	0.36	NS
5. Management of the Unit	2.95	2.89	-0.45	NS

NS Not significant

Professional Characteristics

Educational Background - Table 4.19 depicts the results of the t-test performed to compare stress factor mean scores for RN diploma nurses and for nurses with advanced education in terms of post RN certificate, baccalaureate degree and/or additional courses. No significant differences were observed between these two groups of nurses for any of the five stress factors.

Employment Status - As shown in Table 4.20 the t-test revealed no significant differences between nurses employed full-time and nurses employed part-time for any of the five stress factors. This finding was surprising as it was expected that part-time employment would considerably reduce the intensity of perceived stress.

Years in Present Clinical Specialty Within the Hospital Where the Respondent is Employed - With a one-way analysis of variance, comparisons were made between groups of nurses classified according to years of present clinical specialty experience within the agency studied. Table 4.21 indicates that no significant differences were found among the groups on any of the five stress factors. The data suggest that the amount of clinical specialty experience acquired within the agency studied had relatively little influence on the nurses' perceptions of stress.

Years in Present Clinical Specialty Regardless of Place of Employment - The results of a one-way analysis of variance of stress factor mean scores for nurses classified according to years of present clinical specialty experience regardless of place of employment are shown in Table 4.22. The Scheffé procedure indicated that nurses with six to ten years experience in their present clinical specialty had a signifi-

Table 4.19

T-test Comparisons of Stress Factor Mean Scores According to Educational Background

Stress Factor	Educational Background			
	Group 1 RN Diploma Only (n = 134) Mean	Group 2 Advanced Education (n = 36) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.05	3.10	-0.37	NS
2. Lack of Support for Professional Growth	2.19	2.29	-0.78	NS
3. Patient Care Responsibilities	2.42	2.46	-0.32	NS
4. Role Strain	2.28	2.41	-0.99	NS
5. Management of the Unit	2.94	2.85	0.55	NS

NS Not significant

Table 4.20

T-test Comparisons of Stress Factor Mean Scores According to Employment Status

	Employment Status			
Stress Factor	Group 1 Full-time (n = 118) Mean	Group 2 Part-time (n = 52) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.09	2.99	0.82	NS
2. Lack of Support for Professional Growth	2.22	2.19	0.20	NS
3. Patient Care Responsibilities	2.44	2.40	0.38	NS
4. Role Strain	2.34	2.23	1.00	NS
5. Management of the Unit	2.90	2.98	-0.57	NS

NS Not significant

Table 4.21

One-way Analysis of Variance of Stress Factor Mean Scores According to Years of Present Clinical Specialty Experience Within the Agency Studied

	Present Clinical Specialty Experience Within Agency Studied							
Stress Factor	Group 1 < 1 year (n = 17) Mean	Group 2 1 year (n = 22) Mean	Group 3 2 years (n = 34) Mean	Group 4 3 - 5 years (n = 53) Mean	Group 5 6 - 10 years (n = 32) Mean	Group 6 11 years or more (n = 11) Mean	F-Ratio	Significance
1. Unsatisfactory Relationships at Work	2.96	3.27	3.03	3.10	3.06	2.76	0.84	NS
2. Lack of Support for Professional Growth	2.20	2.39	2.22	2.18	2.26	1.83	1.01	NS
3. Patient Care Responsibilities	2.35	2.69	2.45	2.45	2.36	2.22	1.30	NS
4. Role Strain	2.17	2.52	2.28	2.40	2.20	2.15	1.05	NS
5. Management of the Unit	2.56	3.23	2.90	2.95	3.01	2.66	1.67	NS

NS Not Significant

Table 4.22

One-way Analysis of Variance of Stress Factor Mean Scores According to Total Years in Present Clinical Specialty Regardless of Place of Employment

Stress Factor	Present Clinical Specialty Experience Regardless of Place of Employment						
	Group 1 1 year or less (n = 27) Mean	Group 2 2 years (n = 19) Mean	Group 3 3 - 5 years (n = 62) Mean	Group 4 6 - 10 years (n = 38) Mean	Group 5 11 years or more (n = 23) Mean	F-Ratio	Significance
1. Unsatisfactory Relationships at Work	3.15	3.07	3.04	3.26	2.68	2.47 *	4 > 5
2. Lack of Support for Professional Growth	2.35	2.22	2.20	2.34	1.87	2.04	NS
3. Patient Care Responsibilities	2.56	2.47	2.46	2.53	2.06	3.09 *	1 > 5 4 > 5 3 > 5
4. Role Strain	2.28	2.44	2.29	2.46	2.05	1.45	NS
5. Management of the Unit	2.90	2.84	2.92	3.20	2.61	2.12	NS

* Significant at < 0.05

cantly higher mean score for factor 1: unsatisfactory relationships at work (mean 3.26) than did their colleagues with experience of 11 years or more (mean 2.68). Also, on factor 3: patient care responsibilities, the Scheffé test revealed that nurses with clinical specialty experience of one year or less (mean 2.56), six to ten years (mean 2.53), and three to five years (mean 2.46) have significantly higher mean scores than nurses with clinical specialty experience of 11 years or more (mean 2.06).

Total Years of Nursing Experience - The results of a one-way analysis of variance of stress perceived by nurses classified according to total years of nursing experience are presented in Table 4.23. Significant differences were found among the means on four of the five stress factors. The Scheffé test showed that nurses with six to ten years nursing experience had significantly higher mean scores than nurses with experience of 11 years or more on the following stress factors: unsatisfactory relationships at work (mean 3.26 compared to 2.85), lack of support for professional growth (mean 2.39 compared to 2.02), patient care responsibilities (mean 2.56 compared to 2.17), and management of the unit (mean 3.17 compared to 2.70). Perhaps nurses with six to ten years nursing experience are at a stage in their career where they are questioning their career choice which, in turn, influences their vulnerability to stress at work. In addition, on factor 3: patient care responsibilities, nurses with three to five years nursing experience had a significantly higher mean score (mean 2.50) than did their colleagues with experience of 11 years or more (mean 2.17).

Table 4.23

One-way Analysis of Variance of Stress Factor Mean Scores According to Total Years of Nursing Experience

Stress Factor	Total Years of Nursing Experience Group 1 1- 2 years (n = 18) Mean	Group 2 3 - 5 years (n = 46) Mean	Group 3 6 - 10 years (n = 59) Mean	Group 4 11 years or more (n = 47) Mean	F-Ratio	Significance
1. Unsatisfactory Relationships at Work	3.01	3.04	3.26	2.85	2.86 *	3 > 4
2. Lack of Support for Professional Growth	2.22	2.16	2.39	2.02	2.73 *	3 > 4
3. Patient Care Responsibilities	2.51	2.50	2.56	2.17	4.62 **	3 > 4 2 > 4
4. Role Strain	2.61	2.34	2.27	2.20	1.59	NS
5. Management of the Unit	2.72	2.90	3.17	2.70	3.46 *	3 > 4

* Significant at < 0.05

** Significant at < 0.01

Organizational Characteristics

Clinical Specialty in Which Respondent is Presently Employed - Table 4.24 shows that no significant differences exist between medical nurses and surgical nurses for any of the five stress factors. The results of the t-test performed to compare stress factor mean scores for medical-surgical and critical care nurses are presented in Table 4.25. Critical care nurses had significantly higher mean scores than did the medical-surgical nurses on three stress factors: unsatisfactory relationships at work (mean 3.21 compared to 2.95), lack of support for professional growth (mean 2.35 compared to 2.11), and management of the unit (mean 3.09 compared to 2.80). Medical-surgical nurses reported a significantly higher mean score (mean 2.47) for factor 4: role strain than did their critical care colleagues (mean 2.07).

Effect of Relocation of Nursing Unit During June/July 1986 - The t-test comparisons of stress factor mean scores for nurses who reported that their nursing unit had relocated during the summer months in 1986 and for those who reported that their nursing unit did not relocate during this time are presented in Table 4.26. The reader is reminded that there were three nursing units which did not move during the summer months in 1986 but were already occupants in the new hospital facility. Significant differences were found between the groups for all five stress factors. Nurses who reported that their nursing unit did not relocate during the summer in 1986 had significantly higher mean scores on the following four stress factors: unsatisfactory relationships at work (mean 3.29 compared to 2.95), lack of support for professional growth (mean 2.36 compared to 2.14), patient care responsibilities (mean 2.59 compared to

Table 4.24

T-test Comparisons of Stress Factor Mean Scores According to Clinical Specialty Presently Employed

	Clinical Specialty Presently Employed			
Stress Factor	Group 1 Medical (n = 47) Mean	Group 2 Surgical (n = 53) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.00	2.91	0.56	NS
2. Lack of Support for Professional Growth	2.13	2.10	0.23	NS
3. Patient Care Responsibilities	2.42	2.35	0.52	NS
4. Role Strain	2.42	2.51	-0.69	NS
5. Management of the Unit	2.83	2.78	0.33	NS

NS Not significant

Table 4.25

T-test Comparisons of Stress Factor Mean Scores According to Clinical Specialty Presently Employed

	Clinical Specialty Presently Employed		
Stress Factor	Group 1 Medical-Surgical (n = 100) Mean	Group 2 Critical Care (n = 70) Mean	t-value
1. Unsatisfactory Relationships at Work	2.95	3.21	-2.30 *
2. Lack of Support for Professional Growth	2.11	2.35	-2.17 *
3. Patient Care Responsibilities	2.38	2.50	-1.28
4. Role Strain	2.47	2.07	3.92 **
5. Management of the Unit	2.80	3.09	-2.25 *

* Significant at < 0.05

** Significant at < 0.01

Table 4.26

T-test Comparisons of Stress Factor Mean Scores According to Relocation of Nursing Unit During June/July 1986

Stress Factor	Relocation of Nursing Unit During June/July 1986 Group 1 Nursing Unit did Relocate (n = 111) Mean	Group 2 Nursing Unit did not Relocate (n = 58) Mean	t-value
1. Unsatisfactory Relationships at Work	2.95	3.29	-2.96 **
2. Lack of Support for Professional Growth	2.14	2.36	-2.03 *
3. Patient Care Responsibilities	2.36	2.59	-2.54 *
4. Role Strain	2.46	2.04	3.96 **
5. Management of the Unit	2.83	3.11	-2.14 *

* Significant at < 0.05
** Significant at < 0.01

2.36), and management of the unit (mean 3.11 compared to 2.83). The findings suggest that exposure to a new work environment exacerbated the stress associated with daily work life. On factor 4: role strain, nurses who reported a nursing unit relocation had a significantly higher mean score (2.46) than did their colleagues who reported a non-relocation of their nursing unit (2.04). It appears that the move during June/July 1986 contributed to difficulty in role performance more so than the move made earlier in the year.

Rotating Shift - The t-test was performed to compare nurses who work rotating shifts with those who do not work rotating shifts. As reported in Table 4.27 no significant differences exist between these two groups for any of the five stress factors.

Hours Usually Worked - The category of "other" was excluded from analysis because of the small proportion of respondents who indicated "other" for hours usually worked (2.4%). The results of the t-test indicate no significant differences between nurses who work eight hour shifts and those who work 12 hour shifts for any of the five stress factors. The findings are reported in Table 4.28.

Regression Analysis

Which factors are the best predictors of overall work-related stress?

Stepwise multiple regression analysis was done to determine the best predictors of overall work-related stress. For this analysis, the five stress factors were used as the predictor or independent variables and overall work-related stress was the criterion or dependent variable.

Table 4.27

T-test Comparisons of Stress Factor Mean Scores According to Whether Respondents Work Rotating Shifts

	Rotating Shifts			
Stress Factor	Group 1 Do Work Rotating Shift (n = 143) Mean	Group 2 Do not Work Rotating Shift (n = 26) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.08	2.95	0.86	NS
2. Lack of Support for Professional Growth	2.23	2.14	0.56	NS
3. Patient Care Responsibilities	2.43	2.49	-0.50	NS
4. Role Strain	2.35	2.12	1.55	NS
5. Management of the Unit	2.95	2.79	0.90	NS

NS Not significant

Table 4.28

T-test Comparisons of Stress Factor Mean Scores According to Hours Usually Worked

Stress Factor	Hours Usually Worked Group 1 8 hour shift (n = 39) Mean	 Group 2 12 hour shift (n = 127) Mean	t-value	Significance
1. Unsatisfactory Relationships at Work	3.02	3.07	-0.35	NS
2. Lack of Support for Professional Growth	2.25	2.19	0.46	NS
3. Patient Care Responsibilities	2.38	2.44	-0.56	NS
4. Role Strain	2.39	2.30	0.72	NS
5. Management of the Unit	3.00	2.90	0.65	NS

NS Not significant

As shown in Table 4.29 the best predictor of overall work-related stress was factor 3: patient care responsibilities which accounted for 27.5% of the variance. Factor 4: role strain and factor 2: lack of support for professional growth also entered the regression equation in the order listed. Together, these three variables accounted for 34.3% of the variance in overall work-related stress. It is interesting to note that factor 1: unsatisfactory relationships at work and factor 5: management of the unit, rated highest in terms of intensity of stress, did not contribute significantly to overall work-related stress in the regression analysis.

General Perceptions of Overall Work-Related Stress and Job Satisfaction

The research questions dealing with overall work-related stress and job satisfaction were similar in nature which, in turn, facilitated a joint presentation of the findings.

Overall Work-Related Stress and Job Satisfaction

> *How do nurses rate their overall level of work-related stress/job satisfaction?*

Table 4.30 illustrates the frequency and percentage frequency distribution of the respondents' general perceptions of overall stress and job satisfaction by clinical specialty. Of the total sample, 3.5% of the respondents found their work was not stressful, 30% reported that work was mildly stressful, 55.9% reported that work was moderately stressful, and 10.6% found their work very stressful. None of the respondents considered their work extremely stressful. The largest group of respondents who found their work moderately to very stressful were employed in critical care (71.4%) as compared to medicine (63.8%), and surgery (62.2%).

Table 4.29

Stepwise Multiple Regression with Stress Factors as Independent Variables and Overall Work-Related Stress as the Dependent Variable

	Dependent Variable		
Independent Variables	R-square	Percentage Contribution	r
Factor 3: Patient Care Responsibilities	0.275	27.5	0.524
Factor 4: Role Strain	0.326	5.1	0.413
Factor 2: Lack of Support for Professional Growth	0.343	1.7	0.448
	Total	34.3	

Table 4.30

Overall Amount of Stress and Job Satisfaction of Respondents by Clinical Specialty

Variable	Medicine		Surgery		Critical Care		Total	
	f	%	f	%	f	%	f	%
Overall Work-related Stress								
Not Stressful	4	8.5	1	1.9	1	1.4	6	3.5
Mildly Stressful	13	27.7	19	35.8	19	27.1	51	30.0
Moderately Stressful	27	57.4	28	52.8	40	57.1	95	55.9
Very Stressful	3	6.4	5	9.4	10	14.3	18	10.6
Extremely Stressful	0	0.0	0	0.0	0	0.0	0	0.0
Total	47	100.0	53	99.9	70	99.9	170	100.0
Overall Job Satisfaction								
Not Satisfied	0	0.0	0	0.0	1	1.4	1	0.6
Slightly Satisfied	6	12.8	4	7.5	9	12.9	19	11.2
Satisfied	24	51.1	31	58.5	37	52.9	92	54.1
Very Satisfied	16	34.0	15	28.3	20	28.6	51	30.0
Extremely Satisfied	1	2.1	3	5.7	3	4.3	7	4.1
Total	47	100.0	53	100.0	70	100.1	170	100.0

With respect to overall job satisfaction, over half the respondents in the total sample (54.1%) were satisfied with their job whereas 30.0% were very satisfied and 4.1% were extremely satisfied. Of the total sample, 0.6% were not satisfied while 11.2% were slightly satisfied with their job. The largest group of "satisfied" or "very satisfied" nurses were employed in surgery (86.8%) followed closely by medicine (85.1%) and then critical care (81.5%).

Analysis of the Impact of Selected Characteristics on Overall Work-Related Stress and Job Satisfaction

> *To what extent are differences in nurses' perceptions of overall work-related stress/job satisfaction associated with the selected personal, professional, and organizational variables?*

Characteristics found to have a major impact on overall stress included: age, marital status, presence of children, employment status, years of present clinical specialty experience within the agency studied, years in present clinical specialty regardless of place of employment, and total years of nursing experience. Overall job satisfaction was found to be influenced by one variable only; namely, presence of children.

Personal Characteristics

Age - Table 4.31 shows the results of a one-way analysis of variance of overall work-related stress and job satisfaction perceived by nurses classified according to three age categories: 21-30 years, 31-40 years, and 41 years or older. The Scheffé test showed that nurses in the 21-30 year age group had a significantly higher overall stress mean score (2.86) than did nurses in the 41 years or more age group (2.52). Although no significant differences existed among the groups on overall job satisfaction, younger nurses tended to be less satisfied with work.

Table 4.31

One-way Analysis of Variance of Overall Work-Related Stress and Job Satisfaction According to Age

	Age				
General Perceptions	**Group 1** 21-30 years (n = 92) **Mean**	**Group 2** 31-40 years (n = 47) **Mean**	**Group 3** 41 years or older (n = 29) **Mean**	F-ratio	Significance
1. **Overall Work-Related Stress**	2.86	2.62	2.52	3.66 *	1 > 3
2. **Overall Job Satisfaction**	3.20	3.28	3.41	1.00	NS

* Significant at < 0.05

Marital Status - The differences in the overall level of work-related stress perceived by single and married nurses are shown in Table 4.32. Single nurses had a significantly higher overall stress mean score (2.97) than did married nurses (2.63). The t-test also revealed no significant difference between the groups on job satisfaction.

Presence of Children - The t-test comparisons of overall work-related stress and job satisfaction mean scores for nurses who have children and those who do not have children are reported in Table 4.33. Overall work-related stress was significantly higher for nurses who do not have children (mean 2.91 compared to 2.53). Overall job satisfaction, however, was significantly higher for nurses who have children (mean 3.38 compared to 3.16). As shown in Table 4.34 a one-way analysis of variance yielded no significant differences in overall stress and job satisfaction perceived by nurses classified according to the number of children they have. These findings suggest that perceptions of overall stress and job satisfaction held by nurses who have children were not influenced by the number of children they had.

Professional Status

Employment Status - Differences in overall work-related stress perceived by full-time and part-time nurses are reported in Table 4.35. Full-time nurses scored significantly higher on overall stress (2.81) than did their part-time colleagues (2.58). This finding was expected but as reported earlier, employment status did not account for significant differences in stress factor mean scores. It would appear that factors other than the ones identified in the study contributed to overall stress.

Table 4.32

T-test Comparisons of Overall Work-Related Stress and Job Satisfaction According to Marital Status

General Perceptions	Marital Status Group 1 Single (n = 60) Mean	Group 2 Married (n = 102) Mean	t-value
1. Overall Work-Related Stress	2.97	2.63	3.11 **
2. Overall Job Satisfaction	3.18	3.28	-0.84

** Significant at < 0.01

Table 4.33

T-test Comparisons of Overall Work-Related Stress and Job Satisfaction According to Presence of Children

General Perceptions	Presence of Children Group 1 Have children (n = 79) Mean	Group 2 Do not have children (n = 90) Mean	t-value
1. Overall Work-Related Stress	2.53	2.91	3.67 **
2. Overall Job Satisfaction	3.38	3.16	-2.04 *

* Significant at < 0.05
** Significant at < 0.01

Table 4.34

One-way Analysis of Variance of Overall Work-Related Stress and Job Satisfaction According to Presence of Children

	Presence of Children				
General Perceptions	Group 1 One Child (n = 19) Mean	Group 2 Two Children (n = 37) Mean	Group 3 Three or More Children (n = 23) Mean	F-ratio	Significance
1. Overall Work-Related Stress	2.58	2.57	2.43	3.11	NS
2. Overall Job Satisfaction	3.32	3.35	3.48	0.44	NS

NS Not Significant

Table 4.35

T-test Comparisons of Overall Work-Related Stress and Job Satisfaction According to Employment Status

	Employment Status		
General Perceptions	Group 1 Full-time (n = 118) Mean	Group 2 Part-time (n = 52) Mean	t-value
1. Overall Work-Related Stress	2.81	2.58	2.00 *
2. Overall Job Satisfaction	3.20	3.38	-1.49

* Significant at < 0.05

No significant difference was observed between the two groups for overall job satisfaction.

Years in Present Clinical Specialty Within the Hospital Where the Respondent is Currently Employed - The results of a one-way analysis of variance of overall work-related stress and job satisfaction perceived by groups of nurses classified by years of present clinical specialty experience are shown in Table 4.36. The Scheffé test indicated that nurses with one year clinical specialty experience had a significantly higher overall stress mean (3.18) than did nurses with experience of 11 years or more (2.09), or nurses with six to ten years experience (2.56). In addition, nurses with three to five years (2.81) and two years clinical experience (2.79) had significantly higher overall stress means than those nurses with experience of 11 years or more (2.09). No significant differences were found among the groups on overall job satisfaction.

Present Clinical Specialty Experience Regardless of Place of Employment - With a one-way analysis of variance, comparisons were made among five groups of nurses classified according to years of present clinical specialty experience regardless of place of employment. Significant differences were found among the overall stress mean scores. The Scheffé test revealed that nurses with specialty experience of one year or less (mean 2.89) and nurses with three to five years experience (mean 2.82) had significantly higher overall stress mean scores than nurses with experience of 11 years or more (mean 2.30). There were no significant differences found among the groups for overall job satisfaction. These findings are reported in Table 4.37.

Table 4.36

One-way Analysis of Variance of Overall Work-Related Stress and Job Satisfaction According to Years of Present Clinical Experience Within the Agency Studied

	Present Clinical Speciality Experience Within Agency Studied							
General Perceptions	Group 1 < 1 year (n = 17) Mean	Group 2 1 year (n = 22) Mean	Group 3 2 years (n = 34) Mean	Group 4 3 - 5 years (n = 53) Mean	Group 5 6 - 10 years (n = 32) Mean	Group 6 11 years or more (n = 11) Mean	F-Ratio	Significance
1. Overall Work-Related Stress	2.65	3.18	2.79	2.81	2.56	2.09	5.04 **	2 > 6 2 > 5 4 > 6 3 > 6
2. Overall Job Satisfaction	3.06	3.14	3.26	3.25	3.38	3.54	0.87	NS

** Significant at < 0.01

Table 4.37

One-way Analysis of Variance of Overall Work-Related Stress and Job Satisfaction According to Present Clinical Specialty Experience Regardless of Place of Employment

	Present Clinical Specialty Experience Regardless of Place of Employment						
General Perceptions	Group 1 1 year or less (n = 27) Mean	Group 2 2 years (n = 19) Mean	Group 3 3 - 5 years (n = 62) Mean	Group 4 6 - 10 years (n = 38) Mean	Group 5 11 years or more (n = 23) Mean	F-Ratio	Significance
1. Overall Work-Related Stress	2.89	2.79	2.82	2.76	2.30	3.08 *	1 > 5 3 > 5
2. Overall Job Satisfaction	3.19	3.26	3.24	3.26	3.39	0.26	NS

* Significant at < 0.05

Total Years of Nursing Experience - The results of a one-way analysis of variance of overall stress and job satisfaction for nurses classified according to total years of nursing experience are shown in Table 4.38. The Scheffé test indicated that nurses with one to two years nursing experience had significantly higher overall stress (3.06) than did nurses with experience of 11 years of more (2.51). No significant differences were found between the groups on overall job satisfaction.

Organizational Characteristics - The organizational characteristics of nursing unit presently employed, relocation of nursing unit June/July 1986, rotating shift, and hours usually worked were not found to be related to perceptions of overall stress and job satisfaction.

Correlation Between Overall Work-Related Stress and Job Satisfaction

> *What is the relationship between nurses' general perceptions of overall work-related stress and job satisfaction?*

The Pearson product-moment correlation coefficient was calculated to determine the extent to which work-related stress was related to job satisfaction. The analysis indicated that there was a slight negative correlation between overall work-related stress and job satisfaction ($r = -0.191$, $p = 0.013$). In other words, there was a slight tendency for nurses who scored high on overall work-related stress to score low on job satisfaction.

Table 4.38

One-way Analysis of Variance of Overall Work-Related Stress and Job Satisfaction According to Total Years of Nursing Experience

General Perceptions	Total Years of Nursing Experience				F-Ratio	Significance
	Group 1 1- 2 years (n = 18) Mean	Group 2 3 - 5 years (n = 46) Mean	Group 3 6 - 10 years (n = 59) Mean	Group 4 11 years or more (n = 47) Mean		
1. Overall Work-Related Stress	3.06	2.76	2.80	2.51	3.23 *	1 > 4
2. Overall Job Satisfaction	3.22	3.24	3.19	3.38	0.66	NS

* Significant at < 0.05

Summary

The findings related to the research questions of the study were presented in this chapter. Data analysis techniques such as means, rank order, factor analysis, t-tests, analysis of variance, Spearman and Pearson correlation and stepwise multiple regression were discussed to describe the sources of work stress, stress factors and general perceptions of work-related stress and job satisfaction. Responses to the one open-ended question were categorized by content.

CHAPTER 5

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This chapter presents an overview of the study, a review of the findings, the conclusions derived from the findings, and implications for practice and further research.

Overview of the Study

This section presents a review of the study in terms of its purpose, research methodology, and sample.

Purpose of the Study

The purpose of this study was to identify the sources of work-related stress for critical care and medical-surgical staff nurses within a tertiary care hospital in Alberta, to compare the levels of stress reported by both groups of nurses and to explore the relationship between the nurses' perceptions of work-related stress and selected personal, professional, and organizational variables. The study also explored the relationship between the nurses' perceptions of overall work-related stress and job satisfaction.

Research Methodology

A survey was conducted using the questionnaire developed for the study. The questionnaire consisted of three sections related to: 1. biographical data, 2. perceptions of work-related stress, and 3. general perceptions of work-related stress and job satisfaction. One open-ended question provided respondents with an opportunity to describe any stressful work-related situation not included in the list of items.

The critique of the questionnaire by seven reviewers followed by the pilot test helped to establish face and content validity. The internal reliability of the questionnaire was assessed by the Guttman Split-Half procedure and was found to provide reasonable stability for measuring the nurses' perceptions of work-related stress.

The statistical procedures used to analyze the data were descriptive and exploratory in nature. Frequency and percentage distribution were used to describe the personal, professional and organizational characteristics of the respondents and their general perceptions of overall work-related stress and job satisfaction. The magnitude of stress associated with each of the questionnaire items was assessed by frequency and stress means and rank order. Factor analysis was performed to determine the most logical clustering of items for each of the factors. Spearman rank correlation and Pearson correlation were computed to explore the relationship between frequency and intensity of stress and the relationship between overall stress and job satisfaction respectively. Stepwise multiple regression analysis was performed to determine the best predictors of overall work-related stress. The t-test and one-way analysis of variance procedures were used to test for significant differences on stress factor mean scores and overall work-related stress and job satisfaction mean scores for nurses classified according to selected characteristics. When one-way analysis of variance yielded F-ratios significant at the 0.05 level, the Scheffé test was used to identify significant differences between pairs of mean scores for the stress factors and overall work-related stress and job satisfaction variables. The responses to the one open-ended question were categorized according to the content of each comment.

The Sample

Two hundred and nine nurses from one tertiary care hospital in Alberta met the three criteria for inclusion in the study. Specifically, all participating nurses were RN staff nurses, employed in their present clinical specialty for at least six months and employed in an adult critical care or medical-surgical unit. The sample consisted of 88 (42.1%) critical care nurses, 55 (26.3%) medical nurses and 66 (31.6%) surgical nurses.

One hundred and seventy completed questionnaires were returned for an overall response rate of 81.3 percent. Medical nurses had the highest response rate (85.4%), followed by surgical nurses (80.3%) and then critical care nurses (79.5%).

Review of the Findings

The major findings related to each of the research questions are summarized below:

1. Overall Work-Related Stress

1.1 How do nurses rate their overall level of work-related stress?

Nearly all respondents (96.5%) found their work stressful to some degree. Specifically, 30% of the total sample indicated that work was mildly stressful, 55.9% considered work moderately stressful and 10.6% reported that work was very stressful. None of the respondents, however, reported that their work was extremely stressful. The greatest proportion of the respondents who found their work moderately to very stressful were critical care nurses (71.4%) as compared to medical (63.8%) and surgical (62.2%) nurses.

1.2 To what extent are differences in nurses' perceptions of overall work-related stress associated with the personal variables of age, sex, marital status, and number of children?

Age. Nurses in the 21 to 30 year age category had a significantly higher overall stress mean score (mean 2.86) than did their colleagues in the 41 years and older group (mean 2.52).

Gender. Because of the small proportion of male respondents (2.4%) relative to female respondents (97.6%), gender was excluded from data analysis.

Marital Status. Single nurses had a significantly higher overall stress mean score (mean 2.97) than married nurses (2.63).

Presence of Children. Nurses without children scored significantly higher (mean 2.91) on overall stress than nurses with children (mean 2.53). Perceptions of overall work-related stress reported by nurses who have children were not influenced by the number of children they had.

1.3 To what extent are differences in nurses' perceptions of overall work-related stress associated with the professional variables of educational background, employment status, number of years in present specialty within the hospital currently employed, total years of experience in present specialty regardless of place of employment, and total number of years of nursing experience?

Educational Background. Educational background did not account for significant differences in the nurses' perceptions of overall work-related stress.

Employment Status. Full-time nurses had a significantly higher overall stress mean score (mean 2.81) than part-time nurses (mean 2.58).

Years in Present Specialty Within the Agency Studied. Nurses with one year experience in their present position scored significantly higher on overall stress (mean 3.18) than did their counterparts with experience of six to ten years (mean 2.56) and 11 years or more (mean 2.09). Nurses with two years (mean 2.79) and three to five years (mean 2.81) experience in their present position also had significantly higher overall stress mean scores than nurses with experience of 11 years or more (mean 2.09).

Years of Experience in Present Specialty Regardless of Place of Employment. Regardless of place of employment nurses who had worked one year or less (mean 2.89) and three to five years (mean 2.82) in their present specialty had significantly higher overall stress than those nurses with specialty experience of 11 years or more (mean 2.30).

Total Years of Nursing Experience. Nurses with one to two years total nursing experience had a significantly higher overall stress mean score (mean 3.06) than nurses with experience of 11 years or more (mean 2.51).

1.4 To what extent are differences in nurses' perceptions of overall work-related stress associated with the organizational variables of nursing unit specialty and shift assignment?

Nursing Unit Specialty. No significant differences in overall work-related stress were observed between medical and surgical nurses. Although most critical care nurses reported that work was moderately to very stressful, there were no statistically significant differences in overall stress scores between critical care and medical-surgical nurses.

Shift Assignment. Overall work-related stress was not found to be related to whether or not nurses work rotating shift, the hours usually worked or relocation of nursing unit during June/July 1986.

2. Sources of Work Stress

2.1 How do nurses rate the frequency of occurrence and the intensity of stress for each of the selected items?

Regarding frequency of occurrence, 35 items had an average occurrence rating between rarely and occasionally and 27 items were found to be in the occasionally to frequently range of occurrence. The most frequently experienced items, "working with nurses who are floated to your unit" and "being assigned to work rotating shifts" occurred in the frequent to almost constantly range. Only one item, "being asked to disregard/overlook hospital policies and/or procedures" had an average rating between never and rarely and therefore ranked as the least frequently occurring item.

On average, none of the items were perceived as being very or extremely stressful. The 21 items ranked highest in intensity of stress had mean scores that correspond to the moderately to very stressful range. Forty items were considered mildly to moderately stressful whereas only four items were perceived as being in the range of not stressful to mildly stressful.

Comparisons of stress mean scores according to the respondents' clinical specialty revealed that, on average, critical care nurses experienced greater stress related to 47 of the 65 items than did nurses from medical or surgical clinical settings.

2.2 What is the relationship between the frequency of occurrence and the intensity of stress with the selected items?

The Spearman rank correlation coefficient (r = -0.055, p = 0.333) indicated that there was no significant relationship between frequency of occurrence and intensity of stress.

2.3 Which work situations do nurses personally identify in open-ended responses as being sources of work-related stress?

Thirty-eight percent of the respondents provided comments about situations at work which, in their view, cause them stress. Many nurses elaborated on work situations identified in the questionnaire while others described sources of stress which were not included. Of the latter group, the following work-related situations were considered stressful: giving total patient care, and poor utilization of resources (e.g., wastage of supplies, unavailability of updated manuals on the unit and temporary absence of the Nursing Unit Supervisor). Inappropriate administrative practices, the unavailability of the Unit-Based Instructor, the lack of patient privacy and patient care audits were also identified as stressors. Concerns related to working conditions included comments on inadequate parking facilities, absence of a nurses' lounge, cafeteria service, emergency drills, storage space inadequacy and media attention on the hospital. Overinvolvement with work was also identified as a stressor.

3. Stress Factors

3.1 Do the items perceived as contributing to the nurses' stress at work represent distinct stress factors?

Of factor solutions four to ten, the five factor solution provided the most meaningful clustering of items. The five factor solution accounted for 48.5 percent of the total variance. The five factors identified were: unsatisfactory relationships at work, lack of support for professional growth, patient care responsibilities, role strain, and management of the unit.

3.2 To what extent are the stress factors associated with selected personal, professional, and organizational variables?

Personal Characteristics. Age, marital status, and presence of children were not related to the five stress factors. Gender, as previously noted, was excluded from data analysis.

Professional Characteristics. No significant differences in stress factor mean scores were found in terms of educational background, employment status or years in present specialty within the agency studied. However, significant differences were found between years in present specialty regardless of place of employment on two factors. Nurses with six to ten years experience in their present specialty experienced more stress attributable to factor 1: unsatisfactory relationships at work (mean 3.26) than nurses with experience of 11 years or more (mean 2.68). Nurses with specialty experience of one year or less (mean 2.56), three to five years (mean 2.46) and six to ten years (mean 2.53) scored significantly higher on factor 3: patient care responsibilities than their colleagues with 11 or more years experience (mean 2.06).

When total years of nursing experience were considered, significant differences were found between groups on four factors. Nurses with three to five years (mean 2.50) and six to ten years (mean 2.56) experience scored significantly higher on factor 3: patient care responsibilities than nurses with experience of 11 years or more (mean 2.17). Nurses with six to ten years nursing experience were also found to score higher than their colleagues with 11 or more years experience on factor 1: unsatisfactory relationships at work (mean 3.26 compared to 2.85), factor 2: lack of support for professional growth (mean 2.39 compared to 2.02) and factor 5: management of the unit (mean 3.17 compared to 2.70).

Organizational Characteristics. There were no significant differences for any of the five stress factors between medical and surgical nurses. However, significant differences were found between medical-surgical and critical care nurses on four stress factors. Critical care nurses experienced more stress relative to factor 1: unsatisfactory relationships at work (mean 3.21 compared to 2.95), factor 2: lack of support for professional growth (mean 2.35 compared to 2.11), and factor 5: management of the unit (mean 3.09 compared to 2.80). Medical-surgical nurses experienced more stress due to factor 4: role strain (mean 2.47) than critical care nurses (mean 2.07).

Rotating shift and hours usually worked were not found to be related to any of the five stress factors. Nurses on nursing units that did not relocate in June/July 1986 experienced more stress related to four factors than their counterparts on units that did relocate at this time. That is, nurses on units that did not relocate but were already occupants in the new hospital facility were more stressed by factor 1: unsatisfactory relationships at work (mean 3.29 compared to 2.95), factor 2: lack of support for professional growth (mean 2.36 compared to 2.14), factor 3: patient care responsibilities (mean 2.59 compared to 2.36), and factor 5: management of the unit (mean 3.11 compared to 2.83). The reverse was found with respect to factor 4: role strain. Nurses on units that relocated over the summer months (June/July) in 1986 experienced more role strain (mean 2.46) than their colleagues on units that did not relocate at this time (mean 2.04).

3.3 Which factors are the best predictors of overall work-related stress?

Factor 3: patient care responsibilities was the best predictor of overall work-related stress. This factor accounted for 27.5% of the variance Factor 4: role strain was the second variable to enter the equation followed bv factor 2: lack of support for professional growth. The three factors accounted for 34.3% of the variance.

4. General Perceptions of Work-Related Stress and Job Satisfaction

4.1 How do nurses rate their overall level of job satisfaction?

Of the total sample, 11.8% of the respondents reported that they were not satisfied or slightly satisfied with their work whereas 54.1% were satisfied and 34.1% were very satisfied or extremely satisfied. Over 80.0% of the nurses from the three clinical areas reported that they were "satisfied" or "very satisfied" with work (medicine 85.1%; surgery 86.8%; critical care 81.5%).

4.2 To what extent are differences in nurses' perceptions of overall job satisfaction associated with the selected personal, professional, and organizational variables?

Overall job satisfaction was found to be related to one selected variable only, the presence of children. Nurses with children scored significantly higher (mean 3.38) on overall job satisfaction than nurses without children (mean 3.16). The number of children nurses had did not influence their perceptions of job satisfaction.

4.3 What is the relationship between nurses' general perceptions of overall work-related stress and job satisfaction?

Pearson correlation analysis ($r = -0.191$, $p = 0.013$) indicated that there was a slight negative correlation between overall work-related stress and job satisfaction.

Conclusions

The findings of the study lead to the following conclusions:

1. The majority of nurses found their work stressful to some degree.

2. The most stressful situations cited by the nurses in this study were not the most frequently occurring situations.
3. Of the five stress factors, unsatisfactory relationships at work and management of the unit ranked highest in terms of intensity of stress but were not significant predictors of overall work-related stress.
4. The best predictors of overall work-related stress were patient care responsibilities, role strain and lack of support for professional growth. However, these three factors only partially accounted for overall stress perceived by the nurses which suggests that other factors are important to perceptions of stress.
5. Differences in the level of stress experienced by critical care and medical-surgical nurses were observed. Critical care nurses, on average, experienced more stress related to 47 of the 65 situations listed in the questionnaire and to factor 1: unsatisfactory relationships at work, factor 2: lack of support for professional growth, and factor 5: management of the unit. In contrast, medical-surgical nurses experienced more stress attributed to factor 4: role strain.
6. There were no notable differences between critical care and medical-surgical nurses in terms of their perceptions of overall work-related stress.
7. Nurses with the most experience in their present clinical specialty regardless of place of employment and in nursing generally were the least stressed.

8. The more exposure to the new facility nurses had, the greater the stress.
9. No significant differences in perceptions of stress factors were found relative to age, marital status, presence of children, educational background, employment status, years in present clinical specialty within the agency studied, rotating shift or hours usually worked.
10. Certain demographic characteristics were found to be related to high levels of overall work-related stress. These included the youngest nurses in the study, the single nurses, nurses with no children and nurses employed full-time. The most experienced nurses, however, reported the least amount of overall stress.
11. The majority of nurses were "satisfied" or "very satisfied" with their job.
12. There was no significant difference between the levels of job satisfaction perceived by the critical care and medical-surgical nurses.
13. Nurses with children experienced greater job satisfaction than those without children.
14. A weak negative correlation was found between overall work-related stress and job satisfaction.
15. Not all the self-reported sources of stress mirror those generally reported in the literature.

Implications for Practice and Further Research

Implications for Practice

1. In this study, patient care responsibilities emerged as the most significant predictor of overall stress. Because this factor consists of items related to the very essence of what nurses do, it would appear that supportive measures designed to help nurses cope with the technical and emotional demands of their work are needed. Given that the primary goal of nursing is to provide high quality care to patients, concerted effort to ameliorate patient-based stress should be a responsibility shared by staff nurses, nursing administrators and nursing educators. The benefits of a collaborative approach may be realized in terms of resource sharing, teamwork and staff development and ultimately in a coordinated and comprehensive strategy to help nurses deal with patient care concerns.
2. Role strain was also identified as a significant predictor of overall stress. This finding suggests that there is a need to re-examine and/or clarify the role expectations of professional nursing staff within the tertiary care hospital setting. Further review of the nurse's role should be undertaken both at the individual level and at the organizational level and should address, at minimum, the following questions. Are nurses truly aware of what is expected of them? Are the nurses' expectations of themselves realistic? Are nurses equipped with the knowledge and skills required for their clinician role? Are nurses expected to perform non-nursing tasks? Do the nursing administrators' expectations of nurses parallel those held by hospital administrators?

3. Nurses in this study were also stressed by lack of support for professional growth. This finding suggests that nursing leaders need to establish structures and systems that are more responsive to meeting the professional needs of nursing staff than those already in place. Given the close liaison between professional development and improvement in practice, it behooves nursing leaders to recognize opportunities for enhancing exemplary practice. Furthermore, the importance of professional development as a recruitment strategy remains to be tested.
4. The finding that critical care and medical-surgical nurses differ in their perceptions of stress suggests that unit-based strategies for coping with stress are needed. Strategies may be directed towards alleviating stressors or helping nurses cope with the stress unique to their unit.

Implications for Research

1. In this study, three factors accounted for 34.3% of the variance in overall stress. Further research is needed to identify other sources of stress perceived by nurses.
2. Content analysis of the open-ended responses revealed several stressors not included in the questionnaire. The following self-reported items could be included in future testing of the tool: unclear charge nurse responsibilities, inequitable patient assignments, wastage/unavailability of resources, inconsistent administrative practices, interdepartmental conflicts and physical working conditions.

3. Replication studies using critical care and medical-surgical nurses from other tertiary care hospitals are needed to assess the generalizability of the findings of this study.
4. Further testing of the questionnaire is needed. However, certain shortcomings of the tool need to be addressed prior to repeated administration. Enhancements include:
    - a) Omit the "not applicable" category for the intensity of stress scale.
    - b) Omit instructions to rate the frequency of occurrence and the intensity of stress for self-reported work-related situations.
    - c) Reword the question "Did your nursing unit move to its present location during June 1986 or July 1986?" so that the timing of the move or the move itself is made more explicit. Although this particular question may not be relevant for future study, it highlights the importance of clarity in developing questionnaires.

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APPENDIX A

Cover Letter Sent to Pilot Test Participants

July 7, 1986

Dear Colleague:

I am conducting a research study to investigate critical care and medical surgical RN staff nurses' perceptions of work-related stress. This study is being done as part of the requirements for a Master's degree in Educational Administration at the University of Alberta.

I am requesting your participation in the pilot test of the questionnaire developed for the study. Your evaluation comments will be used to revise and improve the questionnaire.

The questionnaire is designed to measure critical care and medical surgical RN staff nurses' perceptions of the sources, intensity and frequency of occurrence of stress at work. Two questions to determine the nurses' general perceptions of overall work-related stress and job satisfaction are also asked. The nurses selected for the study must be RN staff nurses who have at minimum six months work experience in the specialty in which she/he is presently employed. In addition, all participating nurses must be employed within an adult critical care or medical surgical unit.

Please complete the attached questionnaire by circling your response(s) or by providing a written answer as needed. Once you have completed the questionnaire, please complete the evaluation form. Your comments are greatly appreciated. Please seal the completed questionnaire and evaluation form in the envelope provided. The questionnaires will be returned to me by Mrs. ___________, Project Research Coordinator.

Questionnaires are color coded strictly for the immediate identification of returns. Your responses will be treated confidentially. To ensure the anonymity of your responses, do not reveal your identity on the questionnaire or the evaluation form.

I look forward to receiving your feedback. Thank you for your time and assistance.

Yours sincerely,

Betty Wintonyk, RN, BScN.

APPENDIX B

Questionnaire Used in the Study

PART A: BIOGRAPHIC DATA 5

Please answer EACH question by circling the number for the appropriate response(s) or by providing a written answer where required. Your responses will be kept confidential.

FOR OFFICE USE ONLY
1
1 4

1. Your sex is: 5

   (1) Female
   (2) Male

2. Your marital status is: 6

   (1) Single
   (2) Married (including common law)
   (3) Separated/Divorced
   (4) Widowed

3. How many children do you have? 7

   (1) None
   (2) One
   (3) Two
   (4) Three
   (5) Four or more

4. What is your educational background? (circle more than one if applicable)

   (1) R.N. Diploma 8
   (2) Post R.N. Certificate (please specify) ________________ 9
   ____
   (3) Baccalaureate Degree (please specify from which faculty) 10
   ____
   (4) Master's Degree (please specify from which faculty) 11
   ____
   (5) Other (please specify) ________________________ 12
   ____

5. What is your employment status? 13

   (1) Full-time
   (2) Part-time

FOR OFFICE USE ONLY

6. On which nursing unit are you presently employed? 14

   (1) Cardiovascular Surgical Intensive Care
   (2) Coronary Care
   (3) General Intensive Care
   (4) Medicine
   (5) Neurosurgical Intensive Care
   (6) Surgery

7. Did your nursing unit move to its present location during June 1986 or July 1986? 15

   (1) Yes
   (2) No

8. How many years have you worked in your present clinical specialty within this hospital (as of July 1986)? Please round off to the nearest full year. 16

   (1) Less than 1 year
   (2) 1 year
   (3) 2 years
   (4) 3 - 5 years
   (5) 6 - 10 years
   (6) 11 years or more

9. How many years in total have you worked in your present clinical specialty regardless of place of employment? (Please include experience from present and other hospitals.) Please round off to the nearest full year. 17

   (1) Less than 1 year
   (2) 1 year
   (3) 2 years
   (4) 3 - 5 years
   (5) 6 - 10 years
   (6) 11 years or more

10. Do you work rotating shift? 18

    (1) Yes
    (2) No (please specify which shift you work) ____________
    ____

FOR OFFICE USE ONLY

11. What hours do you usually work? 19

(1) 8 hour shift
(2) 12 hour shift
(3) Other (please specify) ______________________________

____

12. In the space below please write the total number of years of nursing experience you have regardless of the setting (other than as a student). Please round off to the nearest full year. 20-21

( ) years

13. In the space below please write your age in years. 22-23

( ) years

PART B: SOURCES OF WORK-RELATED STRESS

Stress is defined as "the experience of a whole range and mixture of unpleasant sensations: predominantly tension, anxiety, depression, frustration, and a feeling of being emotionally drained resulting from pressures or overburdening demands" (Jankovic, 1983:9).

Listed below are a number of situations which may or may not be stressful in your work.

For each situation, please circle the appropriate number:

(1) in Column A, how often the situation occurs in your work

AND

(2) in Column B, how stressful the situation is to you when it occurs.

If a situation NEVER occurred, circle 1 in Column A and regard the situation as NOT APPLICABLE (circle 0) in Column B.

Please answer all questions.

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
1. Adjusting to the unpredictable workpace of the unit	1	2	3	4	5	0	1	2	3	4	5	24-25
2. Having limited time to provide emotional support to a patient	1	2	3	4	5	0	1	2	3	4	5	26-27
3. Attending staff meetings during work time	1	2	3	4	5	0	1	2	3	4	5	28-29
4. Performing physically strenuous work	1	2	3	4	5	0	1	2	3	4	5	30-31

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
5. Feeling uncertain about the legal responsibilities of your role	1	2	3	4	5	0	1	2	3	4	5	32-33
6. Caring for a critically ill patient whose prognosis is poor	1	2	3	4	5	0	1	2	3	4	5	34-35
7. Receiving limited feedback from your unit supervisor regarding your work performance	1	2	3	4	5	0	1	2	3	4	5	36-37
8. Working with equipment that is not functioning properly	1	2	3	4	5	0	1	2	3	4	5	38-39
9. Floating to another unit	1	2	3	4	5	0	1	2	3	4	5	40-41
10. Not having the doctor available when needed	1	2	3	4	5	0	1	2	3	4	5	42-43
11. Being involved in patient teaching	1	2	3	4	5	0	1	2	3	4	5	44-45
12. Missing scheduled coffee/meal breaks	1	2	3	4	5	0	1	2	3	4	5	46-47
13. Teaching a patient's family about the patient's health care needs	1	2	3	4	5	0	1	2	3	4	5	48-49
14. Not having enough staff to adequately cover the unit	1	2	3	4	5	0	1	2	3	4	5	50-51

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
15. Caring for elderly patients	1	2	3	4	5	0	1	2	3	4	5	52-53
16. Feeling that you have inadequate knowledge of the hospital's policies and procedures	1	2	3	4	5	0	1	2	3	4	5	54-55
17. Receiving limited support from your unit supervisor	1	2	3	4	5	0	1	2	3	4	5	56-57
18. Dealing with the death of a patient	1	2	3	4	5	0	1	2	3	4	5	58-59
19. Receiving incompatible instructions from two or more people	1	2	3	4	5	0	1	2	3	4	5	60-61
20. Receiving inadequate information from a doctor regarding a patient's condition	1	2	3	4	5	0	1	2	3	4	5	62-63
21. Contending with excessive noise levels on the unit	1	2	3	4	5	0	1	2	3	4	5	64-65
22. Caring for a patient whose behavior is difficult (e.g. restless, irrational, or uncooperative)	1	2	3	4	5	0	1	2	3	4	5	66-67
23. Not being involved in making decisions affecting your work	1	2	3	4	5	0	1	2	3	4	5	68-69

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occassionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	2 1 4
24. Having limited opportunities to attend inhouse educational sessions	1	2	3	4	5	0	1	2	3	4	5	5-6
25. Working with a nurse whose attitudes/behavior you consider to be unprofessional	1	2	3	4	5	0	1	2	3	4	5	7-8
26. Having to hide your true feelings to maintain a professional image	1	2	3	4	5	0	1	2	3	4	5	9-10
27. Discussing death and dying with a patient	1	2	3	4	5	0	1	2	3	4	5	11-12
28. Being unclear about your work responsibilities	1	2	3	4	5	0	1	2	3	4	5	13-14
29. Being assigned to work rotating shifts	1	2	3	4	5	0	1	2	3	4	5	15-16
30. Acting as a resource person for various types of health care learners (e.g. student nurses, interns, residents, newly hired personnel)	1	2	3	4	5	0	1	2	3	4	5	17-18
31. Experiencing an interpersonal conflict with another nurse from the unit	1	2	3	4	5	0	1	2	3	4	5	19-20

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
32. Having inadequate protection from biological, chemical or radiation hazards	1	2	3	4	5	0	1	2	3	4	5	21-22
33. Being involved in emergencies	1	2	3	4	5	0	1	2	3	4	5	23-24
34. Attempting to meet the needs of a patient's family	1	2	3	4	5	0	1	2	3	4	5	25-26
35. Being assigned to charge duty	1	2	3	4	5	0	1	2	3	4	5	27-28
36. Having few opportunities to discuss unit problems with colleagues	1	2	3	4	5	0	1	2	3	4	5	29-30
37. Making rapid decisions regarding patient care	1	2	3	4	5	0	1	2	3	4	5	31-32
38. Performing necessary procedures that patients experience as painful	1	2	3	4	5	0	1	2	3	4	5	33-34
39. Being involved in carrying out procedures to unnecessarily prolong life	1	2	3	4	5	0	1	2	3	4	5	35-36
40. Working with a nurse whom you consider deficient in nursing knowledge	1	2	3	4	5	0	1	2	3	4	5	37-38

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
41. Disagreeing with a medical staff member about the treatment of a patient	1	2	3	4	5	0	1	2	3	4	5	39-40
42. Having few facilities available for staff privacy (e.g. nurses' lounge, conference rooms)	1	2	3	4	5	0	1	2	3	4	5	41-42
43. Being the person in the middle between the patients and doctors	1	2	3	4	5	0	1	2	3	4	5	43-44
44. Not having enough time to complete all assigned nursing responsibilities	1	2	3	4	5	0	1	2	3	4	5	45-46
45. Working with nurses who are floated to your unit	1	2	3	4	5	0	1	2	3	4	5	47-48
46. Experiencing an inadequate level of understanding and support from senior hospital nursing administration	1	2	3	4	5	0	1	2	3	4	5	49-50
47. Having few opportunities to share work-related experiences, thoughts, and feelings with colleagues	1	2	3	4	5	0	1	2	3	4	5	51-52
48. Feeling inadequately prepared to provide safe patient care	1	2	3	4	5	0	1	2	3	4	5	53-54

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	
49. Not having sufficient supplies/equipment needed for patient care (e.g. linen, medications)	1	2	3	4	5	0	1	2	3	4	5	55-56
50. Feeling inadequately prepared to provide psychological support to a patient's family	1	2	3	4	5	0	1	2	3	4	5	57-58
51. Contending with too many non-nursing activities (e.g. clerical work, distributing meal trays)	1	2	3	4	5	0	1	2	3	4	5	59-60
52. Feeling pressure to upgrade academic qualifications	1	2	3	4	5	0	1	2	3	4	5	61-62
53. Working with a doctor who does not keep the family informed about the patient's condition	1	2	3	4	5	0	1	2	3	4	5	63-64
54. Receiving limited feedback from colleagues about your work performance	1	2	3	4	5	0	1	2	3	4	5	65-66
55. Being asked to disregard/overlook hospital policies and/or procedures	1	2	3	4	5	0	1	2	3	4	5	67-68
56. Making an error in caring for a patient	1	2	3	4	5	0	1	2	3	4	5	69-70

WORK-RELATED SITUATION	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						FOR OFFICE USE ONLY
	Never	Rarely	Occasionally	Frequently	Almost Constantly	Not Applicable	Not Stressful	Mildly Stressful	Moderately Stressful	Very Stressful	Extremely Stressful	3 1 4
57. Contending with poor communication among nursing staff of the unit	1	2	3	4	5	0	1	2	3	4	5	5-6
58. Experiencing a poor working relationship with a doctor	1	2	3	4	5	0	1	2	3	4	5	7-8
59. Finding that the previous shift's work is left unfinished	1	2	3	4	5	0	1	2	3	4	5	9-10
60. Discussing death and dying with a patient's family	1	2	3	4	5	0	1	2	3	4	5	11-12
61. Being the person in the middle between hospital regulations and the demands of patients and/or their families	1	2	3	4	5	0	1	2	3	4	5	13-14
62. Performing your role with limited advice from your unit supervisor	1	2	3	4	5	0	1	2	3	4	5	15-16
63. Working with a nurse whom you consider deficient in nursing skills	1	2	3	4	5	0	1	2	3	4	5	17-18
64. Working with doctors who seem to constantly criticize nursing practice	1	2	3	4	5	0	1	2	3	4	5	19-20
65. Feeling that senior hospital nursing administrators are unaware of the realities of the unit	1	2	3	4	5	0	1	2	3	4	5	21-22

Please list other work situations that you consider stressful, and rate each of these as you did for the situations previously described.

	COLUMN A How often does this situation occur for you?					COLUMN B How stressful is this situation for you?						
WORK-RELATED SITUATION	Never 1	Rarely 2	Occasionally 3	Frequently 4	Almost Constantly 5	Not Applicable 0	Not Stressful 1	Mildly Stressful 2	Moderately Stressful 3	Very Stressful 4	Extremely Stressful 5	FOR OFFICE USE ONLY

PLEASE TURN TO THE NEXT PAGE TO COMPLETE THE QUESTIONNAIRE.

PART C: GENERAL PERCEPTIONS OF WORK-RELATED STRESS AND JOB SATISFACTION

Please circle the appropriate response for the following two questions.

FOR OFFICE USE ONLY

1. In general, how stressful do you find your work? 23

   (1) Not stressful
   (2) Mildly stressful
   (3) Moderately stressful
   (4) Very stressful
   (5) Extremely stressful

Job satisfaction is defined as a person's positive feeling regarding the work situation.

2. In general, how satisfied are you with your job? 24

   (1) Not satisfied
   (2) Slightly satisfied
   (3) Satisfied
   (4) Very satisfied
   (5) Extremely satisfied

THANK YOU VERY MUCH FOR YOUR COOPERATION.

APPENDIX C

Letter Received from Vice President (Nursing)
Granting Permission to Conduct the Study

11 August 1986

TO: B. Wintonyk
M.Ed. Candidate

FROM: ________________________
Vice President (Nursing)

I am writing to notify you that your proposal has been approved for implementation. If, for any reason, deviations from your outlined protocol are necessary, please discuss them with ________, Chairman, Nursing Research Review Committee, before implementing them.

We are enthusiastic and supportive of your study and would like to take this opportunity to wish you well as you begin your study. At the completion of it, we would appreciate a copy of your study for the library.

If we can be of further assistance, please let us know. Please notify ______________ when you have completed your data collection by completing and forwarding the enclosed form so we will know if and when other researchers can be accommodated.

Sincerely,

____
Vice President (Nursing)

cc: ____________________
Appropriate Assistant Director(s) of Nursing
Appropriate Director(s) of Nursing

A.D

APPENDIX D

Cover Letter Accompanying the Questionnaire
Sent to Respondents

August 18, 1986

Dear Colleague:

I am conducting a study to identify sources of work-related stress for critical care and medical surgical nurses. This study is being done as part of the requirements for a Master's degree in Educational Administration at the University of Alberta.

I am requesting your assistance in completing the attached questionnaire. Your responses will provide valuable information as to the sources of stress in nursing and will enable comparisons to be made of critical care and medical surgical nurses' perceptions of stress at work. It is hoped the study will contribute to a greater understanding of the nature and extent of stress in critical care and medical surgical nursing.

Please be assured that there is no risk involved through your voluntary participation in the study. Questionnaires are color coded strictly for the immediate identification of returns. Your responses will be treated confidentially. To ensure anonymity of your responses do not reveal your identity on the questionnaire.

The questionnaire will take approximately 20 minutes to complete. Please return the questionnaire to me in the enclosed stamped, self-addressed envelope by September 2, 1986.

Also enclosed is a stamped, self-addressed reply card. Please mail the questionnaire and reply card separately, again to ensure the anonymity of your responses. Your returned reply card informs me that you have completed and mailed the questionnaire and that follow-up is not needed.

I am looking forward to receiving your responses. Thank you for your time and assistance.

Sincerely,

Betty Wintonyk, RN, BScN

encs.

APPENDIX E

Reply Card

REPLY CARD

NURSES' PERCEPTIONS OF WORK-RELATED STRESS

Please be advised that I have
completed and mailed the questionnaire

Name: ______________________________

APPENDIX F

Follow-up Letter to Respondents

September 18, 1986

Dear Colleague:

Approximately one month ago I requested your participation in the study I am conducting concerned with assessing nurses' perceptions of work-related stress. As yet, I have not received your reply card indicating that you have completed and returned the questionnaire. It is my hope that you will be able to find time to fill out the questionnaire and mail it to me as soon as possible.

I would very much like to obtain your responses as your perceptions of stress at work will provide valuable information as to the nature and extent of stress in nursing. Your assistance in completing the questionnaire would also enable comparisons to be made of critical care and medical surgical nurses' perceptions of work-related stress.

I wish to emphasize that there is no risk involved through your participation in the study. Your responses will be treated confidentially.

In the event that the questionnaire first sent to you is not readily available, please complete the enclosed questionnaire. Also find enclosed is a stamped, self addressed envelope and reply card. I would deeply appreciate if you would complete and return the enclosed questionnaire and reply card separately by Friday, October 10, 1986.

Thank you for your assistance in this study.

Sincerely,

Betty Wintonyk, RN, BScN

encs.

APPENDIX G

The Level of Stress Associated with Each of the Questionnaire Items As Reported by Medical, Surgical and Critical Care Nurses

Table G.1

Stress Mean Scores of Respondents by Clinical Specialty

Work-Related Situation	Medicine	Surgery	Critical Care	Total
56. Making an error in caring for a patient	3.87	3.68	4.11 *	3.91
39. Being involved in carrying out procedures to unnecessarily prolong life	3.87	3.40	4.00 *	3.79
14. Not having enough staff to adequately cover the unit	3.54	3.49	3.86 *	3.66
65. Feeling that senior hospital nursing administrators are unaware of the realities of the unit	3.71 *	3.55	3.64	3.63
40. Working with a nurse whom you consider deficient in nursing knowledge	3.28	3.42	3.81 *	3.55
63. Working with a nurse whom you consider deficient in nursing skills	3.11	3.49	3.72 *	3.47
44. Not having enough time to complete all assigned nursing responsibilities	3.22	3.25	3.36 *	3.29
22. Caring for a patient whose behavior is difficult (i.e. restless, irrational, or uncooperative)	3.09	3.09	3.57 *	3.29
31. Experiencing an interpersonal conflict with another nurse from the unit	3.10	3.09	3.53 *	3.28
10. Not having the doctor available when needed	3.17	3.27 *	3.19	3.21
25. Working with a nurse whose attitudes/behavior you consider to be unprofessional	2.98	3.16	3.40 *	3.21
64. Working with doctors who seem to constantly criticize nursing practice	2.98	3.17	3.40 *	3.21
46. Experiencing an inadequate level of understanding and support from senior hospital nursing administration	3.16	3.06	3.33 *	3.20
48. Feeling inadequately prepared to provide safe patient care	3.13	3.04	3.33 *	3.19

Table G.1 (continued)

Work-Related Situation	Medicine	Surgery	Critical Care	Total
49. Not having sufficient supplies/ equipment needed for patient care (e.g. linen, medications)	3.40 *	3.13	3.03	3.17
9. Floating to another unit	3.21	2.85	3.36 *	3.15
41. Disagreeing with a medical staff member about the treatment of a patient	3.05	2.96	3.28 *	3.12
59. Finding that the previous shift's work is left unfinished	3.00	3.06	3.17 *	3.09
58. Experiencing a poor working relationship with a doctor	3.02	2.86	3.18 *	3.05
60. Discussing death and dying with a patient's family	2.79	3.04	3.23 *	3.05
33. Being involved in emergencies	3.19 **	3.19 **	2.87	3.04
8. Working with equipment that is not functioning properly	3.00	2.79	3.10 *	2.98
53. Working with a doctor who does not keep the family informed about the patient's condition	2.91	2.92	3.07 *	2.98
6. Caring for a critically ill patient whose prognosis is poor	2.89	2.81	3.13 *	2.96
27. Discussing death and dying with a patient	2.96	2.88	3.02 *	2.96
20. Receiving inadequate information from a doctor regarding a patient's condition	3.00	2.76	3.03 *	2.94
19. Receiving incompatible instructions from two or more people	2.81	2.77	3.12 *	2.93
61. Being the person in the middle between hospital regulations and the demands of patients and/or their families	2.64	2.86	3.17 *	2.92
42. Having few facilities available for staff privacy (e.g. nurses' lounge, conference rooms)	3.18	3.33 *	2.23	2.89
50. Feeling inadequately prepared to provide psychological support to a patient's family	2.66	2.78	3.04 *	2.86
57. Contending with poor communication among nursing staff of the unit	2.76	2.75	2.97 *	2.85

Table G.1 (continued)

Work-Related Situation	Medicine	Surgery	Critical Care	Total
43. Being the person in the middle between the patients and doctors	2.64	2.82	2.95 *	2.83
18. Dealing with the death of a patient	2.61	2.92 *	2.87	2.82
23. Not being involved in making decisions affecting your work	2.72	2.64	3.00 *	2.82
26. Having to hide your true feelings to maintain a professional image	2.67	2.76	2.86 *	2.78
2. Having limited time to provide emotional support to a patient	2.83	2.92 *	2.62	2.77
32. Having inadequate protection from biological, chemical or radiation hazards	2.63	2.65	2.87 *	2.75
55. Being asked to disregard/ overlook hospital policies and/or procedures	2.66	2.81 *	2.73	2.74
35. Being assigned to charge duty	2.67	2.41	2.97 *	2.70
5. Feeling uncertain about the legal responsibilities of your role	2.31	2.71	2.84 *	2.66
38. Performing necessary procedures that patients experience as painful	2.63	2.46	2.83 *	2.66
37. Making rapid decisions regarding patient care	2.39	2.51	2.70 *	2.56
28. Being unclear about your work responsibilities	2.53	2.25	2.71 *	2.53
51. Contending with too many non-nursing activities (e.g. clerical work, distributing meal trays)	2.32	2.70 *	2.42	2.48
21. Contending with excessive noise levels on the unit	2.64 *	2.10	2.56	2.45
45. Working with nurses who are floated to your unit	2.32	2.08	2.79 *	2.44
17. Receiving limited support from your unit supervisor	2.27	2.78 *	2.33	2.43
34. Attempting to meet the needs of a patient's family	2.26	2.25	2.57 *	2.38
1. Adjusting to the unpredictable work pace of the unit	2.44 *	2.26	2.40	2.37

Table G.1 (continued)

Work-Related Situation	Medicine	Surgery	Critical Care	Total
52. Feeling pressure to upgrade academic qualifications	2.48 *	2.10	2.36	2.32
16. Feeling that you have inadequate knowledge of the hospital's policies and procedures	2.30	2.19	2.39 *	2.28
54. Receiving limited feedback from colleagues about your work performance	2.18	2.23	2.25 *	2.23
30. Acting as a resource person for various types of health care learners (e.g. student nurses, interns, residents, newly hired personnel)	2.30	1.96	2.35 *	2.22
4. Performing physically strenuous work	2.20	2.31 *	2.13	2.21
62. Performing your role with limited advice from your unit supervisor	2.26 *	2.11	2.25	2.21
24. Having limited opportunities to attend inhouse educational sessions	2.09	1.89	2.46 *	2.19
29. Being assigned to work rotating shifts	2.33 *	2.24	2.05	2.19
47. Having few opportunities to share work-related experiences, thoughts, and feelings with colleagues	2.12	2.13	2.15 *	2.14
12. Missing scheduled coffee/meal breaks	1.86	1.94	2.33 *	2.09
7. Receiving limited feedback from your unit supervisor regarding your work performance	1.88	2.00	2.25 *	2.08
36. Having few opportunities to discuss unit problems with colleagues	1.93	1.92	2.19 *	2.03
15. Caring for elderly patients	1.75	1.81	1.84 *	1.81
13. Teaching a patient's family about the patient's health care needs	1.56	1.47	1.74 *	1.60
3. Attending staff meetings during work time	1.60 **	1.57	1.60 **	1.59
11. Being involved in patient teaching	1.57 *	1.50	1.38	1.47

* Highest stress mean score
** Tied highest stress mean score